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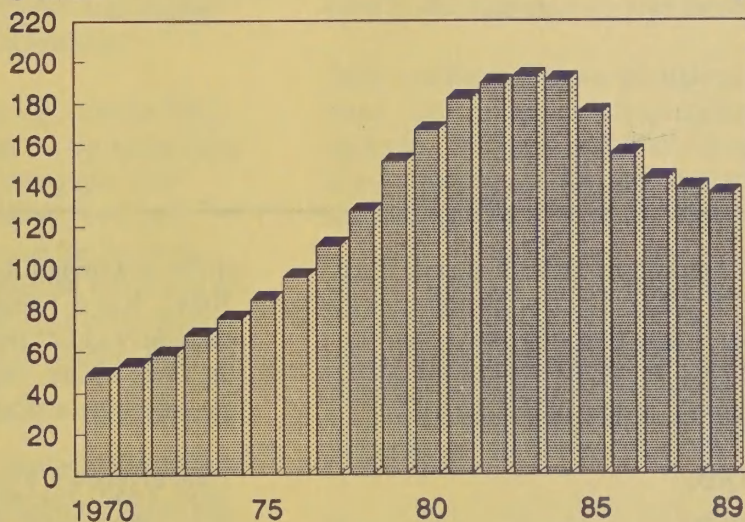
AFO-36
February 1990

Agricultural Income and Finance

Situation and Outlook Report

Total Farm Debt

\$ billion



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Summary

The financial condition of agricultural lenders continued to improve in 1989, and further gains are likely in 1990. However, loan delinquency rates will remain high by historical standards for most lenders because farm financial stress is still present, especially in certain areas adversely affected by weather. Most farm borrowers remain cautious about taking on new debt for expansion, and some paydown of debt continued in 1989. With stagnant loan demand and improving loan portfolios, lenders are again focusing competitive efforts on increasing their share of the agricultural credit market.

The position of agricultural lenders strengthened in 1989 because the overall financial position of farmers was the best since the early 1980's. The improved farm sector financial situation reflects an improvement in income, cautious investment behavior, effective cost control, increased cash financing, and continued structuring and write-offs of outstanding troubled debt. Barring major weather problems, farm sector adjustments in the last half of the 1980's indicate a more stable farm sector and agricultural credit situation in the early 1990's.

The large paydown in farm debt held by major farm lenders appears to be over and debt is expected to grow \$1 to \$2 billion in 1990, or approximately 1 percent. Borrowing for both real and nonreal estate loans should expand in 1990 and creditworthy farmers should have ample access to operating credit. Competition for quality loans and market share among commercial lenders will remain keen. Demand for Farmers Home Administration (FmHA) direct operating loans could exceed the supply. Use of FmHA loan guarantees should be relatively unchanged from last year.

After 2 years of preparation, the Federal Agricultural Mortgage Corporation, Farmer Mac, published its operating rules in January 1990. The dollar volume of mortgages sold through Farmer Mac for calendar 1990 should be small because there is a substantial learning curve for investors, originators, poolers, and farmers. Commercial banks and the Farm Credit System (FCS) should be the main originators of these mortgages since they hold most of the Farmer Mac stock.

Interest rates on short and long loans at agricultural commercial banks in late 1988 averaged 12.85 percent. Long-term rates averaged 40 basis points above short-term rates and fixed rate loans were priced with an average spread of about 10 basis points above variable rate loans. Interest rates declined again in 1989 for Farm Credit Banks as FCS securities gained strength in the bond market and the overall financial strength of the FCS improved. FCS rates on real and

nonreal estate loans averaged about 10.9 percent in 1989, with some long-term rates as low as 9.5 percent.

Agricultural banks continued their recovery, posting the highest rate of return on assets since 1982 (based on mid-1989 figures). Rate of return on equity was also up, although increased bank equity capital levels moderated its growth. Nonperforming loans at these banks continued to decline and are now 51 percent below their 1986 peak.

The economic recovery in agriculture was reflected in a drop in the number of agricultural bank failures to 24, lowest since 1983. Total commercial bank failures declined but still broke 200 for the third straight year. The number of weak banks, potential future failures, declined for the third straight year. Total weak banks stood at 269 on June 30, 1989, of which 53 were agricultural banks.

Capacity to meet increased farm credit demand is more than adequate among the Nation's agricultural banks. Their average loan-to-deposit ratio, 55.7 percent, was lower than desired according to agricultural bankers, although it represented a 3.1-percent increase over the previous year. Most of the increased credit extension was secured by farm real estate.

The financial condition of the FCS improved during 1989 as higher interest income accrued on a smaller loan volume. Gross loan volume fell \$2 billion during the year ending September 30, 1989, twice as much as during the preceding 12 months. Net loan volume also shrank, despite smaller reductions in the allowance for loan losses.

After steadily increasing throughout the decade, the FmHA's direct farmer program delinquencies fell slightly to just under \$8.7 billion at mid-1989. Despite the decline, the share of delinquent loan payments to outstanding loan volume increased to 37.1 percent as loan volume dropped.

Only 35 percent of the \$3.4 billion funding available for FmHA's loan guarantee programs was obligated during fiscal 1989—reflecting weak demand and greater lending authority. Authority for guaranteed lending was up \$500 million, while direct farmer program lending authority remained flat.

The mandatory restructuring of FmHA loans resulted in 4,608 borrowers receiving loan write-downs totaling \$796 million through November 1989. Another 5,029 borrowers elected to pay-off their delinquent loans at the calculated net recovery value. The value of these write-offs was \$1,034 million.

General Economic Developments

Tight monetary policy and its aftereffects dominated the overall economic environment in 1989. Largely in response to higher interest rates, general economic activity slowed markedly throughout the year. Real GNP grew at an annual rate of 3.7 percent in the first quarter, but slowed to about 0.5 percent in the fourth quarter. Nevertheless, the expansion celebrated its seventh birthday in December, as strong exports and high levels of investment bolstered 1989 overall output. Federal Reserve easing in the second half of the year set the stage for continued moderate growth with relatively flat inflation and slowly declining interest rates in 1990.

Rising Interest Rates Curbed Domestic Activity

Interest rates during 1989 responded primarily to Federal Reserve [Fed] actions. The Fed controls the reserves available to banks, which affects the interest rate on reserves borrowed among banks — the Federal funds rate. This Federal funds rate is an important part of bank costs and tends to guide movements in lending and other market-determined interest rates.

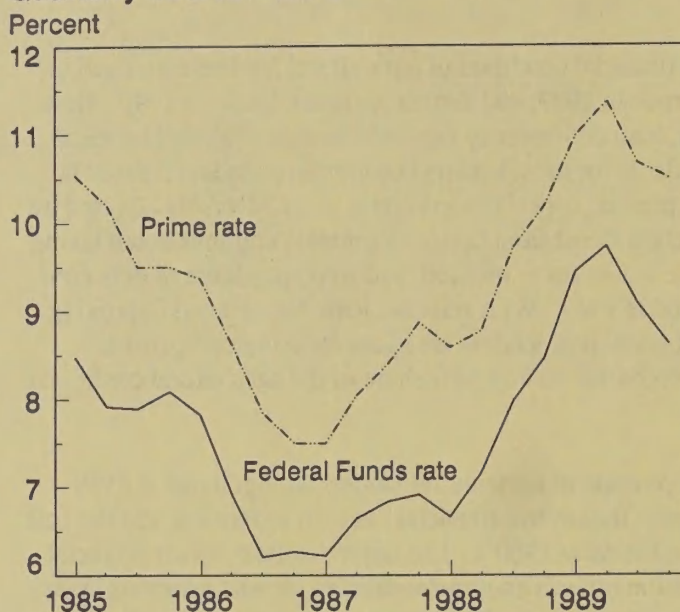
During his February 1989 address to Congress, Federal Reserve Chairman Alan Greenspan reiterated his commitment to continue the policy objective set in 1988: Lower the inflation rate without jeopardizing future economic growth. Several indicators pointed toward potential double-digit inflation for 1989: A rapid previous fourth-quarter rise in overall output; a first-quarter surge in food and oil prices; high and rising capacity utilization; and a 14-year low in the unemployment rate. To defuse potential inflationary pressures, the Fed pushed up the Federal funds rate, which had risen throughout 1988. After an almost 40-basis-point rise in the last 2 months of 1988, the rate climbed another 70 basis points by March. From March through June, the rate hovered at 9.83 percent, the highest level since 1984 (fig 1).

Analysts estimate that it takes one to two quarters before rising interest rates substantially affect production and employment. So the effects of Fed tightening from the last half of 1988 and the first half of 1989 appeared in industrial production, payroll employment, and housing starts in the second quarter of 1989. Industrial production rose only 1.6 percentage points over the first 6 months of 1989, compared with a 2.6-point climb during the same period in 1988.

Employment softened as well, particularly in the goods-producing sector. Between December 1988 and June 1989, the economy generated only 1.5 million nonagricultural jobs, versus the 2.1 million during the same period in 1988. While the service sector gained about the same number of jobs, goods-producing jobs rose by only 135,000 in the first half of 1989, a third fewer than in the first half.

Figure 1

Quarterly Interest Rates



Rising interest rates discouraged new home construction and housing starts fell. First-half 1989 averaged an annual 1.4 million starts, slightly below the 1.5 million for 1988. Since 1986, housing starts have been dropping an average of 200,000 each year.

Despite the slowing manufacturing sector, real GNP appeared strong for the first two quarters. Recovery from the 1988 summer drought, rising exports (see box), and strong business investment produced a healthy 3.7-percent and 2.5-percent annual growth in the first and second quarters, respectively. But approximately 2.5 percentage points of the first-quarter growth was due to the rebound in farm production from drought-lowered levels, suggesting that non-farm production was not growing as quickly as real GNP.

For the first half, exports and business spending on plants and equipment provided the stimulus to nonfarm growth, while consumer spending slowed. Real business investment expenditures rebounded to a 4-percent annual real growth rate in the first half, after little or no growth during the second half of 1988. Businesses hiked purchases of durable equipment by almost 7.5 percent, with virtually no increase in new plants. Personal consumption, the largest component of GNP, slipped considerably in 1989. An average quarterly consumption growth rate of 3.7 percent in 1988 dropped to 2 percent in the first half of 1989.

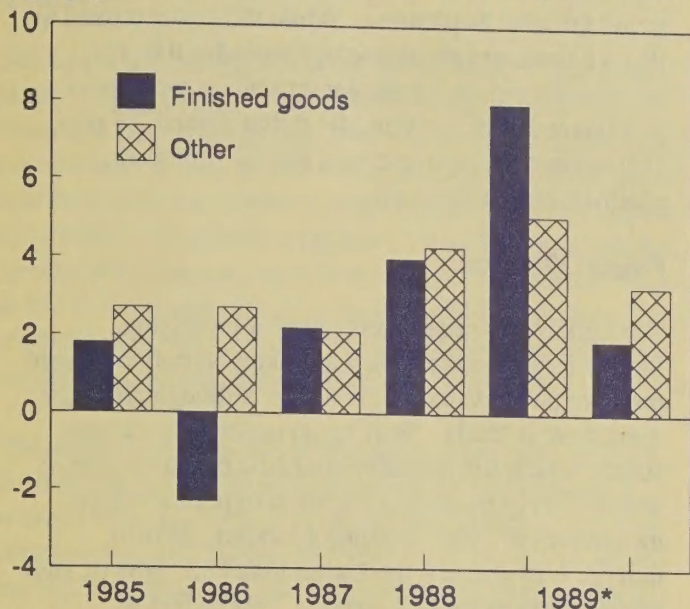
Inflation Subsides as Year Progresses

After a jump in the first quarter, producer price inflation rates for finished goods diminished progressively in 1989 (fig. 2). December 1988 to March 1989 prices rose 10.2 percent (annual rate), falling to just above 5 percent from March to June, and then to 0.4 percent between June and Septem-

Figure 2

Producer Price Index Annual Growth Rates

Percent



* First half and second half of 1989 respectively.

ber, well below the 4-percent December 1987-to-December 1988 rate. A better indicator of overall demand pressure on capacity is the underlying inflation rate—the rate without the volatile food and energy components. Underlying inflation did not approach overall inflation, suggesting only moderate demand pressure on capacity, but the underlying rate declined more slowly than the overall rate throughout 1989, 5.1 percent between December and March, 4.7 percent between March and June, and 3.6 percent between June and September. For the year as a whole, the underlying rate was slightly below the 1988 December-to-December rate of 4.3 percent.

With inflation easing and the economy softening, the Fed slowly reversed tactics to maintain its policy objectives. Falling inflation rates gave the Fed room to cautiously drop the Federal funds rate. Between May and August, it shed 80 basis points, fluctuating around 9 percent during August and September. By December, the average monthly rate was 8.51 percent, just slightly below December 1988's 8.74 percent but still well above January 1988's 6.83 percent.

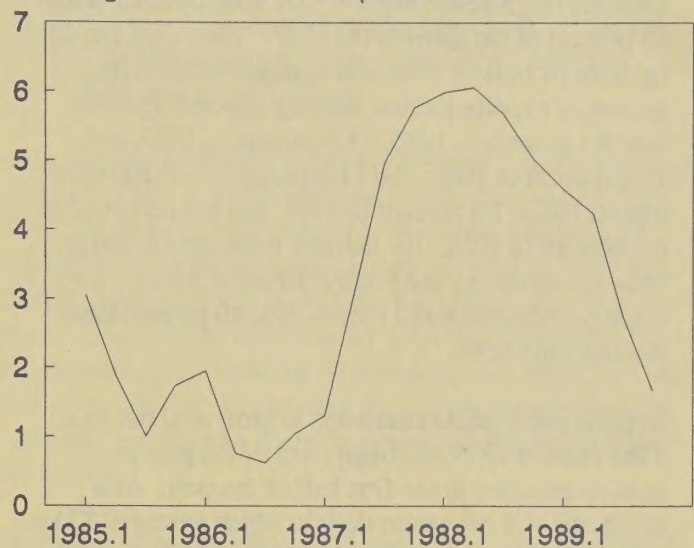
But the relatively high interest rates kept the industrial sector in a slump during the second half of 1989 (fig. 3). Some analysts began voicing concern that the Fed was not easing fast enough and would drive the economy into a recession. By yearend, the production index was only 0.8 percent above the previous December. Manufacturing production, flat throughout the summer, declined sharply from September through the end of the year.

Manufacturing jobs dropped with production. Durable goods jobs fell 121,000 between August and November, a

Figure 3

Change In Industrial Production

% change in index from 4th quarter earlier



Overall Industrial Production Includes mining activity and utilities.

sharp contrast to the 91,000 gain during the same period a year earlier. Overall, goods-producing industries lost 254,000 jobs between August and December. The service sector fared better. The number of service-producing jobs continued to rise, although not as quickly. A 1.4-million job increase between December and June fell to an 836,000-job increase between June and December. The service sector suffered less of an employment drop because it is less sensitive to interest rate movements. Interest-sensitive activity was mixed during the second half. Consumer spending spurted 5.6 percent in the third quarter when durables rose an annual 13.2 percent as automobile manufacturers implemented incentive programs to clear end-of-the-year inventory and promote new models. During the fourth quarter, though, durable consumption fell by more than 10 percent, causing overall personal consumption to grow by less than 0.5 percent on an annual basis. Housing starts fell to their lowest levels in September, only 1,264,000 units, but rebounded to 1,428,000 in October, and fell to 1,361,000 in November. On average, only 1,368,000 units per month were started between June and November compared with 1,435,000 between January and June.

Moderate Overall Growth to Continue in 1990

The outlook for 1990 shows moderate growth in real GNP, averaging between 2.5 and 3 percent. Interest rates are likely to decline further during the first part of 1990 because of lower underlying inflation rate and cautious Federal Reserve easing. Lower interest rates should fuel residential building. The outlook for continued export growth remains good, and a Census Bureau survey taken late in 1989 suggests nearly a 5-percent increase in real spending on business plants and equipment. Recent strong gains in capital

Exports Spur Overall Growth

Over the last 3 years, exports have accounted for about 45 percent of the gains in the GNP. The fall of the dollar from its peak in 1985 was a major factor in the growth of exports and the slowing imports. Exports rose 8.1 percent in 1986, 13.5 percent in 1987, and 17.6 percent in 1988. An 11.8-percent 1986 increase in imports fell to 7.5 percent in 1987, and then dropped to 6.7 percent in 1988. By January 1989, the exchange rate—measured by the Federal Reserve Board's 10-country-trade-weighted index—was 40 percent lower than its 1985 peak.

Exports and imports continued to grow at about their 1988 rates in 1989, although most of the gain in exports occurred in the first half of the year. As a result, the real net export deficit, which averaged \$74.9 billion in 1988, slipped to \$51.2 billion in the second quarter, and worsened in the second half. For all of 1989, the net export deficit averaged about \$56 billion, the fourth consecutive year of improvement. Since 1987, the net export deficit has contracted by about 50 percent.

Rising U.S. interest rates and political instability abroad caused the dollar to gain against most currencies in 1989. By mid-year, the dollar had risen nearly 8 percent on a trade-weighted basis and, although it slipped from September through the end of 1989, it finished the year about where it began. Federal Reserve

easing and a concerted effort on the part of major foreign central banks to bring the dollar down contributed to the fall after September. While the dollar moved little on a trade-weighted-average basis for the year, movements against particular currencies were more pronounced. For the year, the dollar gained 7.7 percent against the Japanese yen, but fell 7 percent against German the mark.

Export Outlook

The outlook for net exports remains promising. Slowly falling interest rates are likely to put downward pressure on the value of the dollar, although no major movement is likely. Barring an unforeseen circumstance, which substantially alters the exchange rate, it will not likely be a major factor in export or import movements in 1990. Foreign economic growth, though, is expected to be higher than U.S. growth, suggesting support for U.S. exports. According to the OECD, real growth in Japan is likely to average about 4.5 percent in 1990, only slightly slower than 1989's 4.8 percent. West Germany is expected to grow about 3.2 percent compared with 4.3 percent in 1989. The International Monetary Fund suggests developing countries will grow about 4 percent. In sum, though not expected to surge in 1990, export growth probably will continue to lead overall U.S. GNP growth, providing stimulus to continued employment and production growth in other sectors.

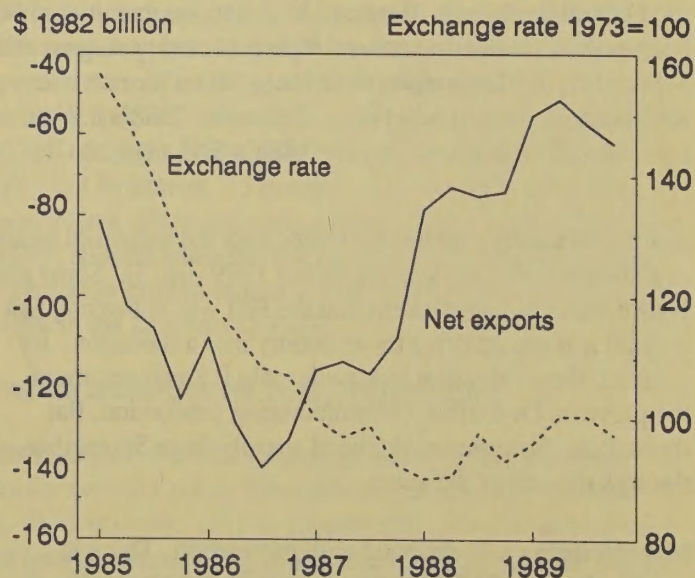
spending and the likelihood of continued gain in 1990 will ease capacity constraints, boosting future productivity and helping to hold down price increases.

Implications For Agriculture

A stable macroeconomic environment, with moderate real growth, slowly falling interest rates, and a stable or slightly falling inflation rate will support the agricultural sector. Lower interest rates will not only affect agricultural lending rates directly, but will also put downward pressure on the exchange value of the dollar, tending to make U.S. agricultural exports slightly more competitive (fig. 4). Lower overall inflation suggests a modest rise in manufactured input costs, although recently crude oil prices have been volatile.

Figure 4

Net Exports and the Exchange Rate



Agricultural Lenders

Overview

The financial condition of agricultural lenders continued to improve in 1989 and further gains are expected in 1990. However, loan delinquency rates will remain high by historical standards for most lenders because farm financial stress is still present, especially in certain areas adversely affected by weather. Most borrowers remain cautious about taking on new debt for expansion, and paydown of debt continued in 1989. With stagnate loan demand and improving loan portfolios, agricultural lenders again seem to be focusing competitive efforts on increasing market share.

The position of agricultural lenders strengthened in 1989 because the overall financial position of farmers was stronger than at any time since the early 1980's. Improvements in the farm sector's balance sheet are due to improving income, cautious investment behavior, effective cost control, increased cash financing, and continued restructuring and write-offs of outstanding troubled debt. In short, adjustment to the economic factors that caused the financial stress of the mid-1980's (high real interest rates, higher production costs, high exchange rates, increased export competition) created a climate for the economic rebound of the farm economy in the late 1980's. Barring major weather problems, the improving economic climate will likely mean a more stable farm sector in the early 1990's.

Recent financial reports and information indicate that, except for the Farmers Home Administration (FmHA), all major institutional lender groups continue to experience lower delinquencies, fewer foreclosures, declining net loan charge-offs, and less loan restructuring activity. Although improvement continues, the pace of working down delinquencies has slowed.

All lenders report that agricultural credit demand was sluggish, while the capacity to lend remained high in 1989. Agricultural commercial banks continue to have ample lending capacity as indicated by low loan-to-deposit ratios. For the Farm Credit System (FCS), the Farm Credit Banks reported \$6.6 billion in new loans for the first half of 1989, about 98 percent of the 1988 pace. FmHA had undisbursed direct operating loan funds available at fiscal 1989 yearend for only the second time since 1982. Total FmHA obligations were down slightly from 1988 and were the lowest since 1975. For life insurance companies still actively pursuing agricultural investments, lending activity picked up during the year. Companies attribute this to greater turnover of farmland.

Despite greater lending activity of some insurance companies, outstanding loan volume continues to shrink and at the end of 1989 was 27.1 percent below the 1981 peak. Loan

volume of the FCS and FmHA continues to shrink as well. FCS loan volume dropped by \$2 billion during the year ending September 30, 1989. Outstanding FmHA volume declined approximately \$1.5 billion from 1988. However, commercial banks posted volume gains of \$1.4 billion, mostly from real estate lending.

Farm interest rates, after declining the past 2 years, increased as much as 100 to 150 basis points in the first part of 1989. However, rates vary considerably by region and lender. Variation also reflects the increasing use of risk-based loan pricing techniques and greater lender concern over market share. Market share concerns are increasing competition among lenders for the most creditworthy customers, the top third of borrowers. Competing for market share instead of profitable loans was a common practice at the beginning of the decade.

The financial health of the FCS and commercial banks continues to improve. Net income for the FCS through the third quarter of 1989 was \$457 million compared to \$434 million for the corresponding period of 1988. However, the quality of earnings improved substantially in 1989 as more net income was derived from net interest income and less from the reversal of loan loss reserves. Agricultural banks reported greater average returns to equity and assets, and lower net loan charge-offs in 1989. These performance measures are approaching values common before farm financial problems appeared in the early 1980's.

FmHA's efforts to work through \$8.7 billion in delinquent loan payments continues. Restructuring requirements of the Agricultural Credit Act of 1987 yielded nearly \$1.8 billion in loan write-downs and write-offs through November 1989. The long process to resolve this backlog of debt, most of which resides under the emergency programs, will be costly. When coupled with reduced lending activity, FmHA's loan volume should continue to fall over the coming years. The Secretary of Agriculture supports policies which continue to restrain FmHA lending activity and tighten its lending standards.

Lenders report keen competition for good quality farm loan assets. Loan-to-deposit ratios inched up for agricultural banks for the year ending June 30, 1989, but surveys of bankers still indicate the ratios are below desired levels. Life insurance companies continue to exhibit considerable variation in loan policies toward agriculture. Several are aggressively seeking new business while others are not.

Rising farmland values continued to bolster sales of lender property acquired through bankruptcy, foreclosure, and other forms of financial stress. The value of acquired property held by the four institutional lender groups fell 13.7 percent the first half of 1989 and was down 23.3 percent from a year earlier on June 30, 1989.

Farmer Mac Ready for Operation

After 2 years of preparation, the Federal Agricultural Mortgage Corporation, Farmer Mac, published operating rules and guidelines in January 1990. This will enable the long-awaited process of originating, pooling, and securitizing farm real estate and rural housing mortgages to begin. Credit underwriting, pool diversification, and security appraisal standards were first released in draft form in April 1989. After a public comment period, the standards were submitted to Congress for review on June 30.

Early indications suggest that rural housing mortgages could contribute more to market volume than originally thought, at least initially. This is because existing rural housing mortgages could have a greater likelihood of meeting Farmer Mac documentation and underwriting standards. Regardless, the dollar volume of mortgages sold through the Farmer Mac market for calendar year 1990 will likely be small because a substantial learning curve for investors, originators, poolers, and farmers must be overcome.

Commercial banks and the Farm Credit System should be the major originators of new mortgages eligible for Farmer Mac since they have a major share of agricultural mortgages and hold the majority of Farmer Mac stock. Several life insurance companies and a handful of agricultural mortgage companies, savings and loan associations, and other financial institutions also purchased stock.

During the year, the Office of the Comptroller of the Currency (OCC) issued an important ruling on capital requirements for commercial banks. At issue was whether banks had to calculate regulatory capital requirements on the entire portion of the loan or just the 10-percent subordinated share. OCC ruled that capital would have to be maintained only on the portion of the loan retained by the originating bank. This increases the profitability and attractiveness of originating mortgages.

At the end of January, the number of mortgage poolers that will be in operation remains uncertain. All FCS district banks purchased sufficient stock to become poolers, but only six have applied with the Farm Credit Administration to charter a national pooler—called the Farm Credit Mortgage Corporation. (A number of security brokerage houses and investment bankers have bought stock in Farmer Mac, but they are not expected to actively pool loans at this time. Rather they are expected to participate by underwriting Farmer Mac-backed securities.)

Farm Debt Stabilizing

The paydown in farm debt should end in 1990. Total loan volume for commercial banks and nonreal estate loan volume for the FCS have increased in the past year, but life insurance companies and the FmHA continued to post declines. Commercial banks experienced a 7.5-percent

increase in real estate lending in 1989, marking the eighth consecutive year of increases for this category. Some of this increase was due to more stringent collateral requirements implemented during the farm financial crisis of the mid-1980's. Traditionally, banks have played only a minor role in farm real estate lending.

Farm loan demand should expand in 1990, producing an anticipated \$1 to \$2 billion increase in total farm debt outstanding by year's end. This increase is expected to end a 6-year trend of debt retirement. Increased activity in the land market should expand the demand for mortgage loans. U.S. farmland values increased 5 percent in 1988, rose an estimated 7 percent in 1989, and will add another 4 to 7 percent in 1990. The strengthening land values should make lenders less concerned about the likelihood of eroding loan collateral values. Farmers may become less reluctant to purchase land and some may refinance short-term debt over a longer period. Farm real estate debt should increase by about \$1 billion in 1990.

Demand for nonreal estate loans should remain high during 1990. Farm capital expenditures fell nearly 60 percent between 1980 and 1986. Rising real interest rates, declining commodity prices, reduced agricultural exports, reluctance to acquire debt, falling land values, reduced planting of cropland, and a binge of capital spending in the 1970's led to much less capital spending in the 1980's. If net farm cash income rises in 1990, agricultural interest rates remain near year-end 1989 levels, and the farm sector's debt/asset ratio is stable or improves, capital expenditures may exceed those of 1989 by 4 or 5 percent. Increased planted acreage and an aging farm machinery stock may also raise farm capital spending. Moreover, 1990 will likely be the sixth straight year when net cash income will be near or greater than \$50 billion, which should positively influence capital expenditures. Demand for nonreal estate loans should rise somewhat during 1990. But since farmers' cash reserves appear adequate and feed costs are down, nonreal estate debt should increase by less than \$1 billion.

Credit Access Is Ample

Creditworthy farmers should have ample access to operating loans in 1990, mostly from commercial banks, the largest suppliers. Their low loan-to-deposit ratios provide liquidity to meet greater credit needs. The FCS in some regions is offering farm customers lower interest rates to regain market share. In some areas, commercial bankers contend that FCS is lending below the cost of doing business. Life insurance companies vary in their policies, ranging from inactivity to aggressive lending plus wholehearted plans for participation in Farmer Mac. Life insurance companies specialize in farm mortgage lending.

The outlook for 1990 indicates that competition for high-quality farm loans will remain keen, which should cause

commercial lenders to keep interest rates down. Overall, commercial lenders have purged the bulk of their problem loans, restored profits, and are looking for new customers. The mood is generally positive, except for some lenders in areas with weather problems.

Federal assistance to family-sized farms unable to obtain credit elsewhere is provided through the FmHA. FmHA's total lending authority remains virtually unchanged from 1989. Except for direct farm ownership (FO) and operating loan (OL) programs, this authority should be sufficient nationally to meet the needs of most higher risk farmers. Demand for FmHA's direct OL and FO could exceed funding due to last year's drought and further acreage expansion. There is \$900 million available for the direct OL program and \$80 million for the FO program. In fiscal 1989, \$856 million and \$95 million were obligated, respectively.

There should be ample budget authority for FmHA's guaranteed OL and FO programs in fiscal 1990. FmHA guarantees repayment of up to 90 percent of an approved loan made by a qualified lender, if the farmer defaults. FmHA committed only 35 percent of its guaranteed lending budget in fiscal 1989.

Lenders' Current Loan Portfolios

The distribution of the farm sector's \$135.6 billion debt outstanding, excluding operator households, as of December 31, 1989, is summarized in table 1. Commercial banks account for 32.3 percent of all farm loans, making them the leading lender, followed by the FCS with 25.9 percent. Individuals and others are estimated to hold 20.3 percent of the total.

Total farm debt outstanding at the end of 1989 represented a decline of \$57.1 billion, or 29.6 percent, from its peak in 1983 (appendix table 1). After peaking in 1983, real estate debt declined 29.1 percent, and nonreal estate debt decreased 30.3 percent (appendix tables 2 and 3). Within the real

estate debt portfolio, loans held by the FCS declined 42.4 percent from their peak in 1984. Life insurance company loans declined 27.1 percent from their high in 1981.

The value of outstanding real estate loans held by commercial banks increased 63.9 percent since 1984 and 101.5 percent during the last 8 years. However, as previously noted, some of the increase resulted from higher loan collateral requirements in the wake of the farm financial crisis rather than from new land loans. The collateral requirement shifts loans from the nonreal estate category into the real estate category. The dollar volume of FmHA real estate loans peaked in 1985, but has declined only 11.7 percent since. It increased 4.1 percent over the 1981-89 period. Despite these changes, the FCS remains the dominant real estate lender with 35.0 percent of the market in 1989, down from a peak of 43.6 percent in 1984.

A number of important changes have occurred in the nonreal estate portfolios of the major farm lenders. By the end of 1989, FCS nonreal estate loans had declined 57.1 percent from their 1981 peak. At the end of 1987, commercial bank loans had decreased 26.7 percent from their top figure in 1984, before increasing 3.6 percent by 1989. By 1985, FmHA loans had increased 11.6 percent from 1981, but then declined 19.9 percent during 1985-89 for a 7.2-percent overall decline for the entire 1981-89 period.

Substantial paydowns in the nonreal estate portfolio began in 1981 for the FCS and in 1984 for commercial banks (appendix table 3). Through the end of 1988, the FCS paydown totaled \$12.5 billion and the 1984-87 paydown of commercial banks was \$10 billion. (The latter had a \$1.0 billion or 3.6-percent increase in 1987-89 in real estate loans outstanding.) The FCS percentage decline was more dramatic because it came from a smaller initial base. In 1989, the FCS held 14.9 percent and commercial banks held 46.7 percent of total nonreal estate debt. The comparable figures in 1981 were 25.4 and 37.3 percent. Thus, in the shrinking farm debt market of the 1980's commercial banks increased their share.

Table 1--Distribution of farm debt, excluding operator households, by lender, December 31, 1989 1/

Lender	Type of debt		
	Real estate	Nonreal estate	Total
	Percent of total		
Commercial banks	11.3	21.1	32.3
Farm Credit System	19.2	6.7	25.9
Farmers Home Administration	6.2	8.7	14.9
Life insurance companies	6.5	---	6.5
Individuals and others 3/	11.6	8.7	20.3
Commodity Credit Corporation	4/	---	4/
Total	54.8	45.2	100.0

1/ Preliminary. Due to rounding some subcategories may not add to totals. 3/ Includes Small Business Administration farm loans. 4/ \$5 million or 0.0037 percent of total debt. This includes CCC storage and drying facilities loans, but excludes CCC crop loans.

The overall paydown in the farm loan portfolio appears to have been driven more by demand than supply. Farmers have decided to hold less debt for a variety of reasons. Large amounts of debt coupled with high interest rates made debt servicing a costly item. Moreover, as other interest rates declined in the 1980's, those for the farm sector tended to come down more slowly. But by 1987-89, compared with the early 1980's, interest rates were lower, farm income stronger, asset values stable, and debt down.

Information on delinquent farm loans by lender during 1980-89 is shown in table 2. FmHA had the highest delinquency rates in both dollars and share of the portfolio. The total value of delinquent loans peaked for commercial banks in

Table 2--Delinquent farm loans, by lender, 1980-89

Lender	Yearend 1/										Mid-year 2/
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	2/
	Billion dollars										
Commercial banks 3/ 4/	NA	NA	.9	1.5	2.1	2.6	2.2	1.5	1.1	1.0	
Farm Credit System 5/	.3	.4	.7	1.3	2.1	5.3	7.1	5.2	4.5	2.9	
Life insurance companies 6/	.3	.5	.8	1.0	1.2	1.7	1.8	1.3	.8	.8	
Farmers Home Administration 7/	3.6	5.8	9.5	11.0	12.1	11.9	12.0	11.8	12.5	12.7	
	Percentage of outstanding loans										
Commercial banks 3/ 4/	NA	NA	2.5	3.8	5.2	7.3	7.0	5.2	3.5	3.3	
Farm Credit System 5/	.5	.5	1.1	1.8	3.3	8.7	14.4	9.9	8.6	5.7	
Life insurance companies 6/	2.0	3.7	6.4	8.3	9.6	15.1	17.0	14.3	8.9	8.7	
Farmers Home Administration 7/	18.2	24.1	37.9	43.9	45.9	41.5	42.9	45.8	49.8	53.9	

NA= Not available. 1/ End of fiscal year (Sept. 30) for the Farmers Home Administration (FmHA) and end of the calendar year (Dec. 31) for the other lenders. 2/ June 30. 3/ Delinquencies were reported by institutions holding most of the farm loans in this lender group. Data shown are obtained by assuming that the remaining institutions in the group experienced the same delinquency rate. 4/ Farm nonreal estate loans past due 90 days or more or in nonaccrual status, from the reports of condition submitted by insured commercial banks. 5/ Data shown are nonaccrual loans. The Farm Credit System also reports "other high-risk loans," but not all such loans are delinquent. Data are from Summary Report of Condition and Performance of the Farm Credit System, Farm Credit Corporation of America, for quarters ending on June 30 for the years 1986-89; Farm Credit System Annual Information Statement--1986, Federal Farm Credit Banks Funding Corporation, March 6, 1987; and, for years before 1985, from Farm Credit Administration Financial Forecast of the Farm Credit System, Appendix B, Farm Credit Administration, May 1987. 6/ Loans with interest in arrears more than 90 days. Data are from the American Council of Life Insurance, Investment Bulletin, various issues. 7/ Prior to 1988 a loan was delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a loan is delinquent if a payment is more than 30 days past due. Data shown are for September 30; thus, they avoid the yearend seasonal peak in very short-term delinquencies and so are more comparable with those shown for other lenders. The FmHA data reflect the total outstanding amount of the loans that are delinquent (as do the data shown for other lenders), rather than the smaller amount of delinquent payments that is often reported as FmHA "delinquencies." Data are from Farmers Home Administration, 616 report, various issues.

Source: Data through 1986 adopted from Emanuel Melichar, "Turning the Corner on Troubled Farm Debt," Federal Reserve Bulletin, Vol. 73, No. 7, July 1987, p. 529. Data beginning with 1987 obtained by ERS from the same sources as those cited by Melichar.

1985 and for the FCS and life insurance companies in 1986. Delinquencies as a percentage of outstanding farm loans peaked in 1986 for all lenders except FmHA, but still remain high by post-Depression standards.

A key concern for farm lenders is the amount of loan losses they have to absorb. Losses for commercial banks, FCS, and FmHA for 1982-89 are shown in table 3. During 1985-89, these lenders had agricultural loan charge-offs totaling \$13.8 billion. The absolute amount of losses experienced by commercial banks was higher than for the FCS as a whole during 1984-85. This changed in 1986, however, with FCS absolute loan loss levels rising above those experienced by commercial banks. But in 1987 the commercial banks once again had higher losses. FCS loan losses as a percentage of loans outstanding remained below those experienced by commercial banks throughout the 1984-87 span. (Commercial bank agricultural loan loss data are not available for 1982-83.)

The varying pattern of losses reflects institutional, accounting, and regulatory differences. Commercial banks tend to focus on farm production loans, where problems surfaced more quickly than for farm mortgages in FCS's loan portfolio. Moreover, until 1985 the FCS tended to show more loan forbearance than commercial banks. The regulators at the time more closely monitored commercial banks, pressuring them to recognize loan losses sooner. In 1985, the FCS began to move toward more stringent accounting procedures

and the Farm Credit Amendments Act of 1985 changed the Farm Credit Administration's (FCA) regulatory role to more closely match that of the Federal commercial bank regulators. Also, the FCS realized the challenges that it tended to downplay in 1982-83 had to be addressed. The result was a much more realistic approach to FCS problem loans. Nevertheless, it often takes a number of months to close out delinquent farm mortgage loans. Thus, once recognized, FCS farm mortgage loan problems required significant time to work their way through to final settlement. However, the FCS mortgage loan write-off figures did not remain high for 1987, as might have been expected. The FCS took a "wait and see" approach that year because of the Federal legislation being debated and because the FCS banks simply could not afford in many instances to foreclose and realize the loan losses.

Another factor explaining some of the difference in the timing of write-offs between FCS and commercial banks may be the March 1986 Federal commercial bank regulators' policy initiative to assist banks experiencing heavy losses due to adverse developments in the farm and energy sectors. One part of this policy encouraged banks to renegotiate problem loans on more favorable terms to their troubled borrowers. Another part reinforced the incentive for bankers to work with their cash-strapped borrowers by changing the way renegotiated debt is reported.

Table 3--Farm loan losses (net charge-offs), by lender, 1982-89

Year	Commercial banks 1/	Farm Credit System 2/	Farmers Home Administration 3/	Exhibit: Life insurance company foreclosures 4/
Million dollars (Percent of loans outstanding at end of period) 5/				
1982	NA	13 6/	32 (0.1)	170 (1.3)
1983	NA	8 6/	77 (0.3)	247 (1.9)
1984	900 (2.3)	428 (0.5)	128 (0.5)	289 (2.5)
1985	1,300 (3.7)	1,105 (1.6)	257 (0.9)	530 (4.8)
1986	1,200 (3.8)	1,321 (2.3)	434 (1.5)	827 (7.9)
1987	535 (1.8)	488 (0.9)	1,199 (4.3)	692 (7.5)
1988	140 (0.5) 7/	413 (0.8)	2,113 (8.4)	364 (4.0)
1989 8/	41 (0.1)	(13) 9/	3,297 (12.4)	159 (1.8)

NA= Not available. 1/ Calendar year data for nonreal estate loans. 2/ Calendar year data. 3/ Fiscal year data beginning October 1. Includes data on the insured (direct) and guaranteed farm loan programs. 4/ Loan charge-off data are not available for life insurance companies. 5/ Loan loss data rounded to nearest million dollars. 6/ Less than 0.05 percent. 7/ Does not include losses under the deferred loan program initiated in the fourth quarter of 1987. Beginning during that quarter small banks with more than 25 percent of their loans to agriculture in farm-dependent areas have been allowed (after regulatory approval) to amortize loan losses over a seven-year period. As of June 30, 1989, 47 banks reported more than \$41 million in agricultural loan loss deferrals. 8/ Commercial bank data through June 30, 1989 and Farm Credit System and life insurance company data through September 30, 1989. 9/ A gain of 0.03 percent.

Source: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit Corporation of America, and Farmers Home Administration.

FmHA exercised extreme loan foreclosure forbearance into 1985, which resulted in low farm loan losses being reported by the agency. FmHA's policy of considerable forbearance continued in 1986 and 1987 because the agency's foreclosure activities were restricted by Congress and the courts. The outcome was low reported loan losses, but an accumulating amount of delinquent loans.

FmHA is beginning to resolve the delinquent loan volume that accumulated during the 1980's. The Agricultural Credit Act of 1987 gave FmHA extensive guidelines to resolve its problem. FmHA has the authority to foreclose on delinquent loans after a complex set of restructuring rules fails to assist the borrower, including forgiving some principal and interest.

Recent Developments in Agricultural Lending

Commercial Banks

Agricultural banks have nearly completed their recovery from the farm financial crisis of the mid-1980's. Annualized mid-1989 results indicate a rate of return on assets (ROA) of 1.1 percent, up from a low of 0.4 percent in 1986 and the highest since 1982. The increase in profitability was abetted by the continued decline in nonperforming loans, down 51 percent from the June 1986 peak to 2.3 percent of total loans. In both cases, agricultural bank performance led that of small nonagricultural banks to which they are often compared, although nonagricultural banks are recovering as well.

Agricultural bank loan-to-deposit ratios rose for the second straight year as loan demand continued its slow climb. While the 2.8-percent increase from June 1988 to June 1989 exceeded the 1.3-percent increase of the previous year, agricultural banks retain more than adequate liquidity to increase credit extension. Small nonagricultural banks experienced an even greater increase of 3.3 percent in their loan-to-

deposit ratio which was already significantly higher than that of agricultural banks.

The two most common definitions of agricultural banks are those of the Board of Governors of the Federal Reserve System (FRB) and the Federal Deposit Insurance Corporation (FDIC). The FRB considers a bank to be agricultural if its ratio of farm loans to total loans exceeds the unweighted average of such ratios at all commercial banks on a given date (16.01 percent as of June 30, 1989). The FDIC uses a 25-percent ratio of agricultural to total loans as its criteria. As of June 30, 1989, there were 4,319 agricultural banks by the FRB definition and 3,271 by the FDIC definition (table 4). Agricultural bank numbers peak at midyear due to high agricultural loan levels then decline with payoffs. From June 1988 to June 1989, the number of FRB agricultural banks dropped by 149 (3.3 percent) while by the FDIC measure they dropped 138 (4.0 percent) (Unless otherwise mentioned, the FRB agricultural bank definition is employed below).

While the number of banks continues to decline, their lending to agriculture has begun to increase again. Total commercial bank farm loans increased by 3.4 percent in the year ending June 1989, including increases of 7.5-percent in real estate and 1.4 percent in nonreal estate debt. The portion of this debt held by agricultural banks declined, however. At mid-1989, the agricultural bank share of total commercial bank farm real estate debt stood at 51.6 percent while the nonreal estate farm loan share was 57.6 percent. These represented 3 and 1 percent declines in shares from a year earlier.

Overall, commercial bank farm production loan quality continued to improve. Nonperforming loans comprised only 3.3 percent of the total at mid-1989, the lowest level since 1982 (table 5). Agricultural banks continued to improve their loan

Table 4--Comparison of definitions of agricultural banks,
1982-89 1/

Item	1982	1983	1984	1985	1986	1987	1988	1989 2/
Com- mercial Banks	14,418	14,427	14,410	14,283	14,008	13,505	12,961	12,860
Agri- cultural Banks (FRB)	5,156	5,115	4,987	4,847	4,704	4,480	4,337	4,319
FRB farm loan ratio (Percent)	17.74	17.56	16.97	16.14	15.78	15.60	15.73	16.01
Agri- cultural Banks (FDIC)	4,112	4,065	3,922	3,682	3,516	3,335	3,236	3,271

1/ Includes domestically chartered, FDIC-insured commercial banks with non-zero deposits. 2/ 1989 figures are for June 30, all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 5--Delinquent loans as a percentage of total loans by type of bank, 1983-89 1/

Date and type of bank	Nonperforming loans			Past due 30-89 days and still accruing	Total delinquent loans 2/
	Non- accrual	Past due 90 days or more and still accruing	Total non- performing 2/		
	Percent				
June 30, 1983					
Agricultural	1.0	1.6	2.7	2.0	4.6
Nonag small banks 3/	1.2	1.3	2.5	2.2	4.6
June 30, 1984					
Agricultural	1.6	1.6	3.2	2.1	5.3
Nonag small banks	1.1	1.0	2.1	2.0	4.0
June 30, 1985					
Agricultural	2.5	1.6	4.1	2.2	6.4
Nonag small banks	1.4	.9	2.3	2.2	4.5
June 30, 1986					
Agricultural	3.1	1.6	4.7	2.2	7.0
Nonag small banks	1.6	1.0	2.6	2.3	4.9
June 30, 1987					
Agricultural	2.6	1.2	3.8	1.9	5.7
Nonag small banks	1.7	.8	2.5	2.0	4.5
June 30, 1988					
Agricultural	1.9	.8	2.7	1.7	4.4
Nonag small banks	1.5	.7	2.2	1.9	4.1
June 30, 1989					
Agricultural	1.5	.7	2.3	NA	NA
Nonag small banks	1.4	.7	2.1	NA	NA

NA = Not available. 1/ Data in this and subsequent tables are weighted by bank asset size. 2/ Columns may not equal totals due to rounding. 3/ Banks with less than \$500 million in assets which were not agricultural by the FRB definition.

Sources: Johnson, James, Emanuel Melichar, and C. Edward Harshbarger, "Financial Condition of the Farm Sector and Financial Institutions," paper presented at the symposium on Financial Stress in Agriculture: Issues and Implications, Kansas City, MO., Nov. 24, 1986, updated by Nicholas Walraven, FRB Staff, in December 1988, and calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

quality as their nonperformings dropped to 2.3 percent from 2.7 percent a year earlier. As of June 1989, approximately \$2.8 billion in loans at all banks had been reported as renegotiated and performing, virtually unchanged from a year earlier. Agricultural banks' share of renegotiated loans declined to \$692 million from \$750 million in mid-1988. Renegotiated loans accounted for 0.94 percent of loans at agricultural banks as of mid-1989 compared to 0.24 percent at other small banks.

Net farm nonreal estate loan charge-offs for all banks stood at slightly over half the level of a year earlier and provisions for loan losses fell, reflecting bank management expectations of continued loan quality improvement. The Competitive Equality Banking Act of 1987 included a provision allowing small (less than \$100 million in assets) agricultural banks (using 25 percent definition) in farm-dependent areas to spread their farm loan losses over 7 years instead of taking them in the year they are incurred. Through mid-1989, 47 banks reported deferring \$41 million in such losses. While small, these losses would have substantially increased agricultural loan charge-offs during the first half of the year.

The improvement in bank loan quality was reflected in the continued decline in numbers of failed and weak banks. Only 24 agricultural banks failed in 1989 compared to a high of 75 in 1987. Nonagricultural bank failures rose slightly in 1989 to 182, reflecting continued impacts of energy and non-farm real estate loan problems.

In 1986, the FDIC instituted two policies designed to limit the credit market interruptions associated with bank insolvencies. The first, "open bank assistance," helps banks nearing insolvency avoid closure by exchanging a portion of their nonperforming loans for cash. The FDIC usually requires a change in the bank's management, a wipe-out of current stockholders' equity, and infusion of additional private capital. In 1989, one nonagricultural banking corporation received open bank assistance, down from 21 in 1988.

The second FDIC policy, "whole bank" closure, mitigates the problems and costs associated with bank insolvencies. The "whole bank" method provides funds to the acquiring bank to cover the failed bank's loan portfolio, including the bad loans. In 1989, 41 bank failures were resolved with this method, down from 56 in 1988. Of these, 12 were agricultural banks.

The number of weak nonagricultural and agricultural banks has declined, indicating that failure rates should decline further (fig. 5). Banks with primary capital asset ratios below 5.5 percent as well as those with adequate capital ratios but substantial impending losses could have applied to the forbearance program through their primary Federal regulator until December 31, 1989. The program expires January 1, 1995, giving banks in the program a minimum of 5 years to rebuild their capital.

Applications for the capital forbearance program had declined in 1988, after increasing steadily since its inception. By September 1988, 490 banks had applied, 273 had been admitted, 114 rejected, and 96 had withdrawn their application or exited the program. In 1989 the number of applications continued to decline as the FRB regulators reported 10 new applicants and admitted only 6 of those while the FDIC regulators reported 40 new applicants and admitted only 23. The application numbers for the OCC are not available as this article goes to publication, but the OCC regulator states that the number of their applicants has declined as well. Preliminary data indicate that most of those exiting the program are failing rather than graduating.

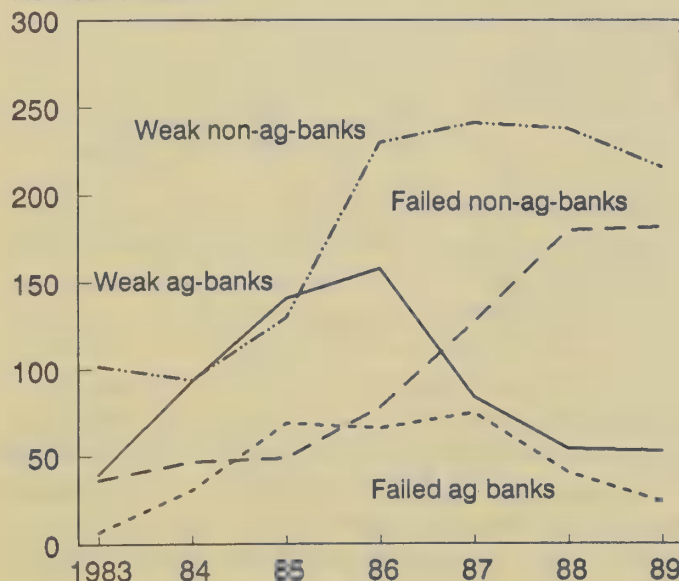
Interestingly, the bulk of severely stressed banks are not in the forbearance program. As of June 1989, 405 banks reported primary capital of less than 5.5 percent of assets, 62 more reported above-standard capital ratios but with nonperforming loans exceeding total capital. Agricultural banks account for about 21 percent of those reporting substandard capital and about 21 percent of the banks with above-standard capital ratios but with nonperforming loans greater than capital.

Overall, agricultural bank profits rose to an annualized ROA of 1.1 percent, 13 percent above a year earlier (table 6). Rate of return on equity (ROE) was up 11 percent over the same period for agricultural banks at 11.8 percent. Once again, agricultural banks outperformed their small nonagricultural counterparts whose ROA was 0.9 percent and ROE was 11 percent. Nonetheless, these ROA and ROE figures for small nonagricultural banks represented 24 and 21 percent improvements over the previous year.

Figure 5

Weak and Failed Commercial Banks

Number of banks



Figures for 1989 weak banks are June 30, all others December 31.

Table 6--Selected bank performance measures by type of bank, 1982-89 1/

Performance measure	1982	1983	1984	1985	1986	1987	1988	1989 Estimated
Percent								
Rate of return on equity capital								
Agricultural banks	14.0	11.0	9.0	6.0	5.1	7.6	10.0	11.8 2/
Nonag small banks	12.0	12.0	12.0	11.0	8.3	8.1	8.7	10.0 2/
Rate of return on total assets								
Agricultural banks	1.1	1.0	.7	.5	.4	.7	.9	1.1 2/
Nonag small banks	.9	.9	.8	.8	.6	.6	.7	.9 2/
Provisions for loan losses as percent of total loans								
Agricultural banks	.8	1.1	1.5	2.4	2.4	1.4	.8	.6
Nonag small banks	.8	.8	.8	1.0	1.3	1.0	.9	.7
Capital as percent of assets								
Agricultural banks	9.3	9.4	9.5	9.6	9.5	9.8	10.0	10.4 3/
Nonag small banks	8.5	8.4	8.5	8.5	8.4	8.8	8.8	9.1 3/

1/ Rate of return on equity is net income after taxes as percent of the average of total equity capital at the beginning and end of the year. Rate of return on total assets is net income after taxes as percentage of total assets on December 31. 2/ 1989 numbers are first-half data at annual rates. 3/ First half data. The post-1987 figures are based on an updated definition of total capital. The changes are minor and do not, for the most part, affect small banks' capital levels.

Source: Melichar, Emanuel, "Agricultural Banking Experience, 1985," Board of Governors of the Federal Reserve System, March 1986, revised appendix data as of November 1986, updated in September 1988 by Nicholas Walraven, FRB Staff, and calculated from the Report of Condition and Report of income files, Board of Governors of the Federal Reserve System.

Agricultural banks increased their already high levels of total capital to 10.4 percent of assets as of June 30, 1989. This was a 2.3-percent rise over the preceding year. Small nonagricultural banks raised their total capital 2.8 percent over the year to a capital-to-asset ratio of 9.1 percent. Equity capital as a percent of assets increased for both bank groups as well; to 9.4 percent for agricultural banks and 8.1 percent for small nonagricultural banks. These high levels of total and equity capital reflect lessons learned during the farm financial crisis of the mid-1980's and will increase the ability of these bank groups to survive another downturn.

Liquidity declined slightly at both agricultural banks and small nonagricultural banks in the year prior to June 30, 1989. Loan-to-deposit ratios rose to 55.7 percent for agricultural banks and 68.9 percent for the others. Agricultural bank loan-to-deposit ratios are still lower than desired by bank management. However, since loans in general are less liquid than securities (the other major asset category of banks) the loan-to-asset ratio sheds some additional light on bank liquidity. The average agricultural bank loan-to-asset ratio stood at 49 percent on June 30, 1989. The similar ratio for small nonagricultural banks was 60 percent. Thus, agricultural banks retained substantially more liquidity, allowing them to respond to increased credit demand.

Two additional policy developments in 1989 are likely to impact future agricultural bank credit extension. First, attention focused on the OCC's positive ruling affecting the treatment of capital of those banks who participate in the Farmer Mac secondary mortgage market. The ruling will allow participating banks to maintain capital reserves against only their subordinated 10 percent of the loan rather than the origi-

nal loan amount before pooling. This should be a significant incentive toward bank use of Farmer Mac.

Second, an area of growing policy importance is developing as environmental management moves from protective legislation to court interpretations. These interpretations are causing banks to adopt careful and sometimes expensive strategies for fear of being held liable for environmental damages stemming from a property they foreclose on or have actively been involved in managing.

Bankers are making broader use of environmental site audits to document the condition of properties for which financing or foreclosure is being considered. Individual audit fees average about \$3,500 and more than \$100,000 if test wells are required. Ultimately, increased costs will be transferred to borrowers as higher loan closing costs or interest rates.

In addition, how the 1990 Farm Bill addresses these issues will be of particular interest to agricultural bankers. This legislation could further define environmentally sound agricultural practices and be used in determining who can be held liable for past and future damages.

While agricultural banks remain well positioned to extend credit, a substantial and increasing share of credit is being provided by other banks (table 7). Larger banks often hold higher levels of farm loans, but these represent a small proportion of their total loan portfolios. Nearly one-quarter of all commercial bank farm debt is held by the largest class of nonagricultural banks. Nonagricultural banks held slightly over 44 percent of commercial bank agricultural debt on June 30, 1989.

The improved health of agricultural banks has not allayed all fears about the growing importance of large banks in agricultural lending and in general. The high failure rate among agricultural banks in the 1980's, the pace of financial innovation, and impacts of deregulation have combined to raise concern over the long-run viability of agricultural and other small banks in the new more competitive environment.

A traditional way to evaluate financial performance is to look at profitability, liquidity, solvency, and efficiency. Tables 8 and 9 provide ratios commonly used in evaluating different size banks.

Bank capital reduces risk by cushioning losses and supports liquidity by maintaining borrower confidence, allowing the bank continued access to financial markets. At mid-1989, the smallest banks' equity capital ratio was nearly double that of the largest banks. The equity capital level of large banks is increasing in anticipation of a change in capital requirements in 1991. Equity capital in the largest bank category increased 6.8 percent over the year prior to June 30, 1989. Total capital for these banks increased only 0.3 percent, however.

The loan-to-deposit ratio has traditionally been used to measure liquidity. However, changes brought about by financial innovation and deregulation have altered the ratio's interpretation somewhat. Some types of loans can now be readily sold, thus reducing the need to hold securities for liquidity purposes and allowing expansion of loan portfolios. Broader and deeper markets for nondeposit funds allow banks to alter management strategies through the purchase of funds, especially short term. Thus, management adapting to these changes might expect higher loan-to-deposit ratios and lower deposit-to-liability ratios. Large banks are employing these strategies and have much higher loan-to-asset and loan-to-deposit ratios and lower deposit-to—liability ratios (table 8).

Profitability is normally measured by ROA and ROE. The smallest banks were significantly less profitable in 1989 than any of the other groups (table 9). However, ROA did not appear to be directly related to bank size as the peak of 0.99 percent occurred in the \$101-\$300 million banks. The \$26-\$50 million banks nearly equalled the rate of return of the largest banks. However, the effect of leverage among larger banks is reflected in an average ROE that was nearly two and one-half times the average rate of return for small banks.

An increasingly competitive banking environment has raised the rewards for efficient operation. This means controlling costs while generating maximum revenues on assets held. Asset utilization is a measure of gross revenue produced by each \$100 of assets. In 1989, the larger banks held the advantage in asset deployment. This results from the higher proportion of assets held in the form of loans by larger

banks. Small banks hold a higher proportion of their assets in securities, which typically earn lower returns.

One impact of deregulation was to encourage the "unbundling" of products, i.e. charging individually for services previously provided as a package. This has resulted in a variety of fees which are a major component of noninterest income. This income provided a much higher portion of total income for the largest banks than any other group. This is especially significant when the ratios of interest-expense-to-total-expense and interest-expense-to-interest-income are considered. Evaluation of the latter two ratios indicates that total expense nearly equals interest income, thus freeing non-interest income for profit.

Small banks, especially rural or agricultural ones, also face several other obstacles in competing against larger banks. First, it may be difficult for them to compete for management specialists. Members of the small bank management team often serve in several roles in an effort to hold personnel costs down. Second, some new financial instruments such as financial futures and options may have minimum transaction sizes exceeding the capacity of a small bank. Third, participation in some financial activities or markets may be hindered by remoteness from markets or dependence upon reputation. Fourth, ability to generate fee income may be curbed in smaller communities as customers resist separate pricing for services previously received for "free". Finally, uneven treatment by regulators willing to allow small sized institutions to fail and procedures for disposing of them have helped larger banks. There is insufficient evidence to predict the demise of small banks; however, monitoring their performance can yield clues to their continued ability to provide farm credit.

Farm Credit System

The financial condition of the FCS improved during 1989 as higher interest income accrued on a smaller loan volume. Gross loan volume fell \$2 billion during the year ending September 30, 1989, twice as much as the preceding 12 months (table 10). Net loan volume also shrank, despite smaller reductions in the allowance for loan losses.

With the institutional reorganization in mid-1988, the FCS stopped reporting financial data for Federal Land Banks and their associations (FLB/FLBA's), providing long term credit, Federal Intermediate Credit Banks and their Production Credit Associations (FICB/PCA's), providing short and intermediate term credit. The FCS now reports data for Farm Credit Banks (FCB's) and their associations, which replace the FLB/FLBA's and FICB/PCA's. The resulting break in information has made detailed analysis of how System district performance changed since the passage of the 1987 Act impossible from published reports.

Table 7--Agricultural lending of nonagricultural banks by bank total asset size, June 30, 1989

Total assets	: Number of banks	: Total ag loans	: Avg. ag loans	: Ag lending share	: Ag loans to total loans
Million dollars	No.	Million --dollars--			--Percent--
under 26	1804	583	.3	1.2	3.7
26 - 50	2038	1513	.7	3.2	3.5
51 - 100	2026	2580	1.3	5.5	3.1
101 - 300	1761	3919	2.3	8.3	2.2
301 - 500	332	1151	3.5	2.5	1.4
over 500	580	11007	19.0	23.4	.7
Total	8541	20753	2.4	44.1	2.9

1/ This represents the percentage of total commercial bank agricultural loans held by this size group of nonagricultural banks.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 8--Selected commercial bank solvency and liquidity measures by bank total asset size, June 30, 1989

Total assets	: Number of banks	: Capital to asset 1/	: Equity to asset 2/	: Loan to deposit	: Loan to asset	: Deposit to liability
Million dollars	No.					
		-----Percent-----				
Under 26	3950	11.2	10.2	58.0	50.9	97.8
26 - 50	3361	10.0	9.1	60.5	53.7	97.8
51 - 100	2706	9.5	8.7	62.4	55.4	96.1
101 - 300	1927	8.8	7.9	69.3	60.6	95.1
301 - 500	334	8.9	7.3	75.3	63.8	91.8
over 500	582	8.0	5.8	88.1	63.6	92.7
Total/Avg.	12860	8.3	6.4	81.8	62.2	93.5

1/ Insured commercial banks having positive quantities of assets, loans and deposits. 2/ Total capital includes equity capital.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 9--Selected commercial bank profitability and efficiency measures by bank total asset size, June 30, 1989 1/

Total assets	: Return on assets 2/	: Return on equity 3/	: Asset utilization 4/	: Noninterest income to total income	: Interest expense to total expense	: Interest expense to interest income
Million dollars						
	---Percent---					
under 26	0.63	6.18	10.26	8.47	58.38	55.23
26 - 50	0.86	9.45	10.21	7.34	61.89	56.29
51 - 100	0.96	11.14	10.23	7.92	62.61	56.54
101 - 300	0.99	12.53	10.50	8.85	61.81	56.50
301 - 500	0.95	12.97	10.58	9.35	62.23	56.80
over 500	0.87	15.04	11.42	15.19	66.53	66.39
Average	0.89	13.77	11.35	13.60	65.30	63.90

1/ All ratios are on an annualized basis. 2/ Rate of return on assets is net income after taxes as a percentage of total assets. 3/ Rate of return on equity is net income after taxes as a percentage of total equity. 4/ Asset utilization is gross income as a percentage of average total assets.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 10--Farm Credit System combined financial data, September 30, 1988, through September 30, 1989

Item	: Sept. 1988	: Dec. 1988	: March 1989	: June 1989	: Sept. 1989
Statement of condition					
Million dollars					
Loans	52,583	51,428	50,744	50,390	50,589
Less allowance for loan losses	2,400	1,858	1,734	1,721	1,639
Net loans	50,183	49,570	48,960	48,669	48,951
Cash and investment	8,103	8,940	8,380	8,953	9,931
Other property owned	702	663	608	532	506
Other assets	2,623	2,442	2,446	2,487	2,851
Total assets	61,610	61,616	60,403	60,641	62,239
Total liabilities	56,310	56,316	54,984	55,626	57,181
Protected borrower capital including allocated surplus	3,715	3,288	2,591	1,992	1,837
Other capital, including surplus	1,585	2,012	2,828	3,023	3,215
Total liabilities and capital	61,610	61,616	60,403	60,641	62,239

Source: Farm Credit Corporation of America, Summary Report the Condition and Performance of the Farm Credit System, Quarters ending September 30, 1988 through September 30, 1989.

Some general information on loan volume of categories somewhat similar to the FLB/FLBA and FICB/PCA is available. For the FCS as a whole, instead of FLB/FLBA loan volume, long-term real estate volume is currently being published; instead of FICB/PCA, short and intermediate volume is reported. But the two categories of loans are currently not published with respect to individual districts in a format that can be used for purposes of income comparison.

Long-term real estate loans for the FCS declined 5.3 percent to \$150 million during the first three quarters of 1989. The decline has been attributed to several causes, including less demand for long-term agricultural loans as the financial conditions of potential borrowers improve, competition from other lenders, and cyclical change. Also farmers are required to purchase less System stock in order to borrow from the FCS. Since the purchase of borrower stock is generally financed by the institution extending the loan, reduced requirements can lower both System volume and capital stock.

By the end of the third quarter of 1989, short- and intermediate-term loans had increased by 10.6 percent over the first 9 months of 1988, mainly due to the cyclical nature of the production process. Loans to cooperatives had declined 1.1 percent since the beginning of the year. But while domestic loans decreased \$841 million, (partially attributable to cyclical change), international loan volume jumped \$727 million.

In general, the BC's had stronger credit quality than the FCB's by the third quarter of 1989. For BC's, the ratio of allowance for loan losses to high-risk loans ranged from a low of 53 percent (CoBank, the BC which covers all territory except the St. Paul and Springfield districts) to 74 percent (St. Paul). The Springfield district reported no high-risk loans. The same ratio for FCB's ranged from 12.4 percent (Western — Sacramento) to 154 percent (Springfield).

Including the FLB/FLBA of Jackson (in receivership) and the FICB of Jackson, the FCB group's allowance for loan losses as a percentage of high-risk loans was 21.6 percent. The net loan charge-offs as a percent of allowance for loan losses for the FCB's as a group was 0.4 percent, ranging from 8.4 percent (Spokane) to negative 3.8 percent (Louisville), where less was lost from default than had earlier been recognized. In comparison, both the St. Paul and the Springfield BC's had virtually no charge-offs, and the BC's as a group reported a net charge-off to allowance for loan losses ratio of 0.3 percent.

From 1985, when the FCS first reported significant financial difficulties, to 1988, when the bailout legislation became law, FCS net income rose from negative \$2.789 billion (a net loss) to positive \$704 million (table 11). During the same period, provision for loan losses declined from \$2.969 billion, (implying money was taken out of net income), to negative \$680 million, (as financial capital was injected back into net income). Thus, most of the actual income change during the period is attributable to change in the provision for loan losses.

Table 11--Farm credit system income, net interest, and loan loss provisions, 1985-89 1/

Item	: 1989 2/	: 1988	: 1987	: 1986	: 1985
Million dollars					
Net interest	732	787	509	781	1,295
Provisions for loan losses	(232)	(680)	(196)	1,798	2,969
Net income (loss)	457	704	(17)	(1,913)	(2,789)

1/ Net interest and loan loss provisions are two major components of net income. 2/ Data for 1989 is for the 9 months ending September 30, 1989.

Source: Farm Credit Corporation of America, Summary Report of Condition and Performance of the Farm Credit System, Quarter ended December 31, 1986 and subsequent news releases.

In 1989, this was no longer true. Net income rose more during 1989 than in 1988 due to an increase in net interest income, and because in 1988 a one-time loss was recorded to cover the repurchase of System debt. For the first 9 months of 1989, net interest income was up 28 percent over the comparable 1988 period. A major reason for this was that the FCS was operating with the average maturity on assets shorter than the average maturity of debt. Since interest rates were generally rising during 1989 (with the exception of the third quarter of 1989), income rose faster than expenses. Other reasons include the recent buy-down of outstanding high-cost debt and the steep decline in nonaccrual loans.

Offsetting the gains in FCS earnings were unusual expenses such as premiums paid to the insurance fund, a fund comparable to the FDIC, (legislated in 1987) and a smaller reduction in the allowance for loan losses. Roughly \$232 million was taken out of the allowance for loan losses and put back into net income during the 9 months ending September 30, 1989, in contrast to a \$469 million shift during the 9 months preceding September 30, 1988.

The Farm Credit Administration, (FCA), the regulator of the FCS, now requires capital paid into the insurance fund to be reported by the FCS as an expense in the System's financial statement. The FCS itself, however, has concluded that the funds should be classified as a restricted (risky) asset, and has brought a law suit against the FCA to change the regulation. If the financial statements had been reported as the FCS currently challenges, System capital at the end of the third quarter of 1989 would have been increased by roughly \$317 million and net income for the first three quarters of 1989 by roughly \$57 million.

The decline in the allowance for loan losses reflects an improvement in the loan portfolio (table 12). While accruing loan volume has dropped more than \$15 billion since 1985, when the FCS first reported significant financial difficulties, as a share of total loan volume it has actually increased by 2.4 percentage points. Net loan recoveries were \$13 million during the first 9 months of 1989, in contrast to \$82 million in net charge-offs for that period of 1988. Nonaccrual loans were down 35 percent to \$2.6 billion by the third quarter of 1989 from 12 months earlier. High-risk loans (nonaccruals, restructures, and other high-risk) and loan-related assets dropped to 15.2 percent of total loans and loan-related assets by the third quarter of 1989 from 16.4 percent at the beginning of the year. Other property owned fell almost \$160 million during the first 9 months of the year as the inventory of acquired property was aggressively marketed and farmland values rose.

The Agricultural Credit Act of 1987 (P.L. 100-233) encouraged or required several changes in the structure of the FCS

Table 12--Farm credit system total loan volume and accruing loan volume, 1985-89

Item	: 1989 1/	: 1988	: 1987	: 1986	: 1985
Billion dollars					
Total loan volume	51.4	51.4	51.5	58.2	69.8
Accruing loans	48.0	48.1	47.3	51.1	64.5
Percent					
Percent of volume accruing	94.8	93.6	91.8	87.8	92.4

1/ Data for 1989 is for the 9 months ending September 30, 1989.

Source: Farm Credit Corporation of America, Summary Report of Condition and Performance of the Farm Credit System, Quarter ended December 31, 1986 and subsequent news releases.

which should make it more resistant to the type of downswing that occurred in the mid-1980's. For example, to deter sharp drops in capital and loan volume the act required borrower stock purchased after October 5, 1988, to be redeemable when the loan is paid off at face value regardless of book value. Retirement of borrower stock issued after that date is not automatic. Protected borrower stock dropped 50.4 percent between 1988 and the end of the third quarter of 1989, while other capital rose 102.8 percent. By the end of the third quarter of 1989, protected borrower stock had dropped to \$1.8 billion while other capital had risen to \$3.2 billion. New borrower stock can pay dividends, even before the initial loan is paid back, if the issuing institution has met its schedule for increasing capital. Currently, borrower stock works effectively like an initial loan fee.

As noted, the 1987 Act required that the FLB and the FICB of each district merge into a "Farm Credit Bank" (FCB). The Jackson FLB went into bankruptcy before the merger. Without statutory direction, the FCA required the Jackson FICB to remain separate until a suitable merger partner could be found.

Then in June 1989, the FCA ordered the Jackson FICB to be merged into the Texas FCB. The order was challenged by the Jackson FICB and the Wichita FCB, with which the Jackson FICB had been interested in merging. The challengers assert that a quorum of the FCA board is necessary for merger authorization. The ramifications of the suit therefore go further than the Jackson merger.

The 1987 Act also required a committee to draw up a merger plan to reduce the number of districts from 11 to a few as six. The committee identified FCB's with similar financial profiles and adjacent territories which might be merged into new viable institutions. However, even though an estimated \$55 million to \$80 million could be saved through merger, current reorganization between associations and between banks within districts, financial issues surrounding the Federal assistance program, and the differences in operational procedures between banks, made an effective merger pro-

posal impossible within a reasonable time frame. Having produced their report, the committee disbanded. District merger negotiation is now solely the province of specific institutions.

One of the most significant organizational changes during 1989 was the merging and re-chartering of FCS associations. On January 1, 1987, a year before the legislation was passed, the System had 37 banks, 233 FLBA's, and 155 PCA's. By the end of the third quarter of 1989, there were 11 FCB's (from mergers at the district level between FLB's and FICB's), the FLB of Jackson, the FICB of Jackson, the CoBank (from merger of 10 district BC's and the Central Bank for Cooperatives), the Springfield BC, the St. Paul BC; 146 FLBA's, 85 PCA's, 39 Agricultural Credit Associations (ACA's) (formed from the mergers of PCA's and FLBA's), and two Federal Land Credit Associations (FLCA's) (table 13). The ACA's are direct lenders of both short and long term credit. The FLCA's were formed as the FLB's transferred their lending authority to FLBA's.

Most associations reorganized during the first months of 1989, though mergers continued through the year as late and revised plans were accepted by the FCA. The number of FLBA's and PCA's increased slightly during 1989 through continued restructuring.

The 1987 Act created the Financial Assistance Corporation to issue 15-year U.S. Treasury guaranteed debt, to assist eligible System institutions. Institutions may ask for assistance if the value of their stock falls below face value, and must ask for assistance if it falls below 75 percent of face value.

By the end of 1989, \$847 million of these funds had been used to assist four FCS banks, (Jackson, Louisville, Omaha, and St. Paul), all of which had stock valued less than 75 percent of face value. A fifth FCB, Spokane, is expected to ask for assistance by mid-March (figure 6).

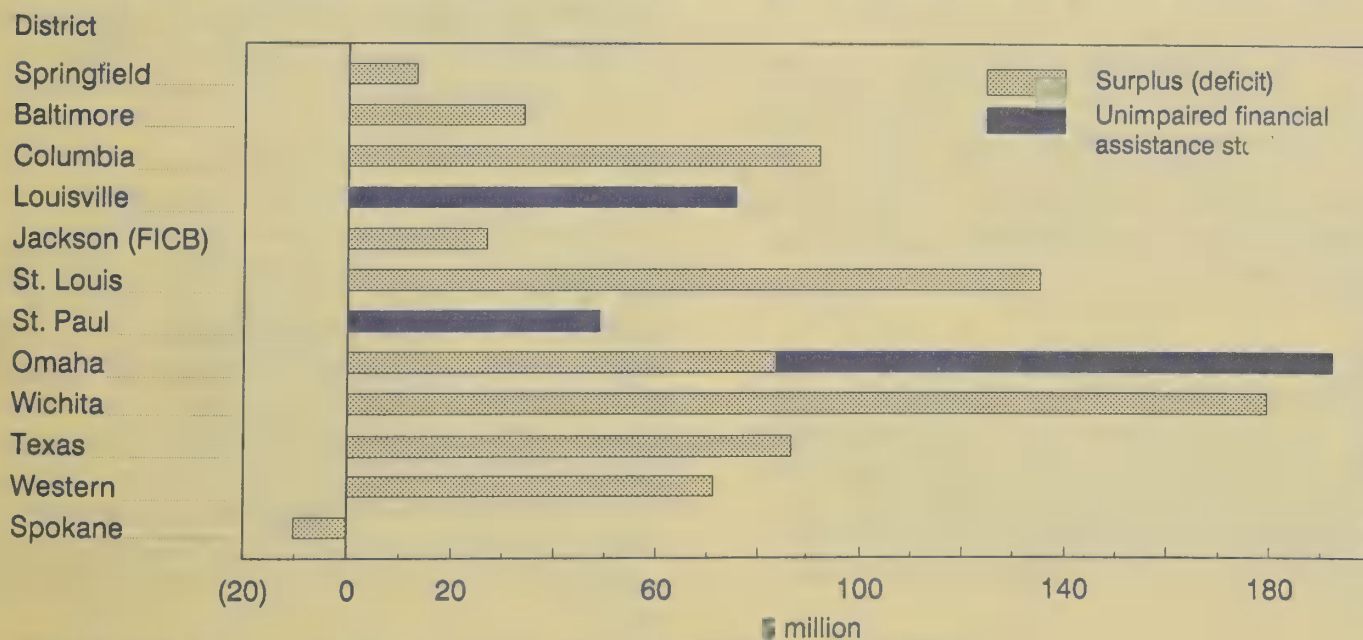
Only one bank receiving financial assistance under the 1987 Act went bankrupt. The Jackson district FLB went into receivership in May 1988, the first FCS bank ever to do so. The FCB of Texas has now taken over most of the Jackson FLB portfolio. On February 10, 1989, the FCB of Texas bought \$940 million of loan and loan-related assets of the FLB of Jackson, paying \$94 million cash and assuming \$846 million of the Jackson FLB debts, \$17 million of which was accrued interest. The Jackson FLB later repurchased \$80 million of the assets.

The Jackson FLB remains primarily liable for \$765 million of FCS debt, most of which will mature in the next 2 years. By October 1989, the Jackson FLB was reporting a cumulative deficit of \$398 million, the estimated cost of liquidation. While the Jackson FLB is not expected to cover all of its losses, its remaining assets should meet debt service requirements through the first half of 1990.

The 1987 Act also required banks to purchase stock in the Financial Assistance Corporation in anticipation of their repayment of any Federal assistance that was to be provided. Because it soon became clear that relatively little of the line of credit would be tapped, FCS banks requested a reduction in the assessment. In October 1988, the Bumpers-Pryor

Figure ■

Farm Credit Banks' Surplus and Unimpaired Financial Assistance Stock, September 30, 1989*



* Financial assistance stock is the capital infusion provided by legislation in 1987 to maintain the solvency of FCS bonds.

Table 13--Farm Credit System district associations, September 30, 1989

District	Type of association 1/			
	FLBA's	PCA's	ACA's	FLCA's
Springfield	-	-	13	-
Baltimore	1	1	16	-
Columbia	20	1	-	-
Louisville	-	2	3	2
Jackson	-	2	-	-
St. Louis	21	5	-	-
St. Paul	22	19	4	-
Omaha	1	1	-	-
Wichita	15	16	-	-
Texas	50	21	-	-
Sacramento	15	15	-	-
Spokane	1	2	-	-
Total	145	85	39	2

1/ Federal Land Bank Associations (FLBA's) administer long-term real estate loans. Production Credit Associations (PCA's) provide short- and intermediate-term credit. Agricultural Credit Associations (ACA's) are direct lenders of both short- and long-term credit. Federal Land Credit Associations (FLCA's) were formed when the Federal Land Banks (FLB's) transferred their lending authority to FLBA's.

Source: Farm Credit Administration, Office of Financial Analysis, Financial Analysis and Standards Division.

Amendment of the 1988 Appropriations bill was passed, allowing banks to "pay as they go" for Federal assistance rather than being required to pay the full costs outlined in the 1987 Act. This legislative change would have required recognition of an additional \$500 million in the Federal budget, but has been repealed.

Instead, in the process of Federal budget negotiations, a compromise was reached and signed into law in December 1989. The portion of Financial Assistance Corporation stock purchased which is in excess of the amount of assistance actually used by October 1, 1991, (when the line of credit expires) will be refunded only after the line of credit expires. However, interest will be paid on the portion of System stock purchases that are in excess of the value of the assistance tapped. The interest payments began December 13, 1989.

Farmers Home Administration

After increasing every year of the decade, FmHA's direct farmer loan program delinquencies fell slightly to just under \$8.7 billion at mid-1989. However, the share of delinquent loan payments to outstanding loan volume increased to 37.1 percent, as loan volume dropped (table 14). The outstanding principal balance on these delinquent loans dropped \$700 million to \$12.7 billion by mid-1989, or 54 percent of outstanding volume.

FmHA's loan delinquency problems reside primarily with its direct Emergency Disaster (EM) and Economic Emergency programs (EE) which accounted for 75 percent of delinquent payments at the end of fiscal 1989 (table 15). The majority of these loans were made from the late-1970's to the early-1980's, a period of liberal lending practices. During the peak year of 1981, \$6.2 billion in EM and EE loans was obligated.

Table 14--Farmers Home Administration direct farmer loan program delinquencies, June 30, 1980, to June 30, 1989 1/

Date	Number of active cases 2/ (caseload)			Principal outstanding		
	Total	Total	Proportion	Total	Amount	Share of total
	Number	Pct.		Mil. dollars	Pct.	
1980	372,046	62,200	16.7	18,192.4	827.6	4.6
1981	423,134	84,955	20.1	22,905.4	1,592.9	7.0
1982	434,460	120,166	27.7	24,137.4	2,933.6	12.2
1983	446,611	146,251	33.5	24,410.2	4,131.8	16.9
1984	446,855	158,237	35.4	25,369.0	5,397.5	21.3
1985	455,561	165,344	36.3	27,786.3	6,384.8	23.0
1986	429,146	157,391	36.7	27,834.6	6,835.2	24.6
1987	396,910	143,270	36.1	26,252.3	7,005.8	26.7
1988	383,571	151,486	39.5	25,395.7	8,749.7	34.5
1989	353,703	136,847	38.7	23,474.6	8,699.7	37.1

1/ June 30 of year shown to account for the annual cyclical trend in delinquencies. 2/ Duplicated cases because some borrowers have loans under several different programs. Prior to 1988 active cases excluded those borrowers who are in foreclosure, bankruptcy, or liquidation status. 3/ Prior to 1988 a case was considered delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a case is delinquent if a payment is more than 30 days past due. 4/ Amount delinquent includes past due principal and interest payments.

Source: Farmers Home Administration, 616 report, various issues.

Table 15--Farmers Home Administration direct farmer loan program delinquencies by program, September 30, 1989

Direct farmer programs	Number of active cases 1/ (caseload)			Principal outstanding		
	Total	Total	Proportion	Total	Amount	Share of total
	Number	Percent		Mil. dollars	Percent	
Farm ownership (FO)	108,325	23,512	21.7	7,003.3	622.4	8.9
Farm ownership -- nonfarm enterprises	1,064	263	24.7	42.9	5.3	12.5
Operating loans -- excluding youth (OL)	97,433	34,741	35.7	5,225.6	1,347.9	25.8
Operating loans -- youth	792	265	33.5	3.1	1.5	49.9
Emergency disaster (EM)	88,575	35,082	39.6	7,682.6	4,629.9	60.3
Economic emergency (EE)	37,120	17,267	46.5	3,065.1	1,342.8	43.8
Recreation	152	44	28.9	10.0	2.4	24.0
Soil and water	12,873	3,468	26.9	249.2	53.2	21.4
Economic opportunity	108	95	88.0	0.2	0.2	94.3
Total	346,442	114,737	33.1	23,281.9	8,005.6	34.4

1/ Duplicated cases because some borrowers have loans under several different programs. 2/ A case is considered delinquent when a payment is more than 30 days past due. 3/ Amount delinquent includes past due principal and interest payments.

Source: Farmers Home Administration, 616 report for September 30, 1989.

The EE program has not been funded since 1984. It was designed to help farmers overcome economic hardship brought on by credit scarcity or a cost-price squeeze. The program was popular because its eligibility requirements were lax and it offered large interest rate subsidies. The EM program provides low-cost loans to farmers who suffered from natural disasters, such as drought and floods. The majority of EM and EE delinquent loans have been in that status for at least 3 years and in many cases are uncollectible because of inadequate collateral. These loans tend to be larger than other FmHA loans because the caps were greater. EE and EM loans account for the majority of FmHA's loan write-offs.

Net write-offs under FmHA's direct loan portfolio amounted to \$3.2 billion in fiscal 1989, up from \$2 billion the previous year. Write-offs reflect losses of loan principal and accrued interest but do not include losses due to annual interest rate subsidies, which alone total in the billions. Losses have risen and delinquencies have fallen because FmHA is finally resolving delinquent loans that accumulated through the 1980's.

Loans are being resolved through a complex five-phase servicing policy begun in late 1988 when FmHA sent delinquency notices to 66,426 borrowers. The policy, outlined by the Agricultural Credit Act of 1987, requires FmHA to restructure loans more than 180 days delinquent, with the objective of keeping farmers on the farm at the lowest cost to the Government.

FmHA uses primary servicing tools, such as loan consolidation, reamortization, and reduced interest rates to assist farm borrowers in paying their debts. If a feasible debt repayment plan cannot be constructed using these options, FmHA must offer delinquent borrowers write-downs of principal and interest debt to the calculated net recovery value of collateral (market value less liquidation costs), if necessary, to keep farmers on their farms.

If these servicing options or any combination of them fail to construct a feasible repayment plan, the borrower may pay off the loan at the calculated net recovery value and continue farming without FmHA credit. If unable to pay off the loan, the borrower may lease or buy back real property or exercise homestead protection rights after FmHA gains possession. These options are known as preservation benefits.

To receive restructuring benefits, the borrower must have acted in good faith when dealing with FmHA and have delinquent accounts for reasons beyond his or her control. If either of these requirements is not met, the borrower may still pay off the loan at the net recovery value or receive preservation benefits. Congress may repeal the benefits to borrowers who have acted in 'bad faith' with FmHA, such as selling collateral without FmHA's permission.

The restructuring policy required a massive processing effort by FmHA staff and increased loan servicing activity over the previous year. During fiscal 1989, 21,000 FmHA borrowers had loans rescheduled, reamortized, or consolidated. This compares with 15,000 in 1988. Limited Resource Interest Rates were extended to 76 percent of Farm Ownership (FO) and 60 percent of Operating Loan (OL) program borrowers. These rates are generally 3 percentage points below regular rates. FmHA also deferred loan payments and subordinated collateral to other lenders to assist its customers.

The restructuring activity under the latter phases of the policy yielded an estimated \$1.83 billion in loan losses as of November 30, 1989. Write-downs on loans were extended to 4,608 borrowers and totaled \$796 million. In addition, 5,029 borrowers received \$1.034 billion in write-offs when paying off their loans at the net recovery value.

Despite the benefits of the servicing policy, over 31,000 borrowers who received FmHA notices did not respond, giving FmHA the right to commence collection action. Another 7,000 borrowers requested appeals or mediation because they did not accept FmHA's restructuring offer. In September 1989, FmHA sent out another batch of notices to long-term delinquent borrowers, bringing the cumulative total to 75,352 as of November 30, 1989. The processing of delinquent borrowers continues.

The number of borrowers receiving foreclosure notices from FmHA in 1989 increased to 957 from 725 in fiscal 1988. More foreclosures are likely because of a November 1989 dismissal of the class action law suit that barred FmHA foreclosures for much of the last 5 years. The Supreme Court refused to hear a last appeal of the case, thus ending the legal roadblock. Originally, the class action suit had argued that FmHA lending procedures had denied borrowers their constitutional rights. The courts have confirmed that FmHA regulations issued for the Agricultural Credit Act of 1987 address the original grievances.

Delinquencies under FmHA's loan guarantee programs at fiscal 1989 yearend were small compared to the direct programs, but continued to climb (table 16). Guarantee delinquencies are lower than direct loan programs because loans are newer, repayment problems are resolved quicker, and a smaller portion of the guarantee portfolio is devoted to emergency lending (table 17). Under a loan guarantee,

Table 16--Farmers Home Administration guaranteed farmer loan program delinquencies, September 30, 1982, to September 30, 1989

Date: 1/	Number of active loans			Principal outstanding		
	Delinquent			Delinquent 2/		
	Total	Total	Proportion	Total	Amount	Share of total
	---	Number	Pct.	---	Mil. dollars	Pct.
1982:	4,067	180	4.4	405.0	12.6	3.1
1983:	3,467	186	5.4	355.5	14.6	4.1
1984:	4,111	235	5.7	484.2	16.2	3.3
1985:	7,160	313	4.4	834.5	19.3	2.3
1986:	15,137	723	4.8	1,664.5	31.4	1.9
1987:	23,558	1,106	4.7	2,384.0	42.6	1.8
1988:	35,746	1,388	3.9	3,177.6	54.1	1.7
1989:	38,840	1,733	4.5	3,243.7	60.6	1.9

1/ September 30 of year shown. 2/ Amount delinquent includes past payments of principal and accrued interest.

Source: Farmers Home Administration, 4067 report, various issues.

Table 17--Farmers Home Administration guaranteed farmer loan program delinquencies by program, September 30, 1989

Guaranteed farmer programs 1/	Number of loans			Principal outstanding		
	Delinquent			Delinquent 2/		
	Total	Total	Proportion	Total	Amount	Share of total
	Number	Percent		Mil. dollars	Percent	
Farm ownership	5,549	300	5.4	772.3	13.5	1.7
Operating loans	23,670	1,063	4.5	2,370.8	32.9	1.4
Emergency loans	10	1	10.0	0.4	0.5	100.0
Economic emergency	748	199	26.6	95.2	12.2	12.8
Emergency livestock	39	17	43.6	4.9	1.5	31.4
Total	38,840	1,733	4.5	3,243.7	60.6	1.9

1/ Emergency, Economic Emergency, and Emergency Livestock guaranteed loan programs are currently not being funded. 2/ Amount delinquent includes past due payments of principal and accrued interest.

Source: Farmers Home Administration, Report 4067 for September 30, 1989.

FmHA guarantees repayment of up to 90 percent of an approved loan made by a qualifying lender, if the farmer defaults. These guarantees are supposed to be extended to family-sized farms unable to obtain regular commercial credit.

Loan guarantee losses totaled \$68 million in fiscal 1989, down from \$91 million in the previous year. Losses represented 2 percent of outstanding guarantee volume at year-end. A General Accounting Office report argues that guaranteed lending practices and oversight may need to be tightened to avoid the losses that have racked the direct programs. However, because commercial lenders must shoulder the first losses and guarantee loans are no longer made for emergency purposes, losses of the magnitude experienced by the direct programs seem unlikely. Yet, because the majority of guarantees are relatively new, the number that potentially could sour may be masked.

Combined outstanding direct and guaranteed farmer program principal at the end of fiscal 1989 stood at \$26.5 billion, down 6.1 percent from the previous year. Outstanding direct loan volume declined \$1.8 billion to \$23.3 billion, while guarantee volume increased slightly during the year. Increased loan write-offs have helped pare direct outstanding loan volume. The decline in direct loan volume can also be explained by reduced direct lending authority resulting from the 1985 shift to greater reliance on guaranteed lending. Despite the decline, FmHA still holds 15 percent of total farm debt and remains the dominant farm lender in some regions.

Total guarantee and direct lending activity (obligations) were down slightly in 1989 (table 18). Unused funding remained for the direct farm operating loan program at year-end for only the second time since 1985 (table 19). The OL program provides loans for up to 7 years (15 years in some circumstances) to purchase equipment or livestock, to finance annual operating expenses, and to refinance debts.

Table 18--Farmers Home Administration farmer program obligations September 30, 1982, to September 30, 1989

Date 2/	Obligations 1/			Outstanding principal of farmer programs 3/
	Total	Direct	Guaranteed	
			Share of total	
	Million dollars	Percent	Million dollars	
1982: 4,113.9	4,062.7	51.2	1.2	24,568.5
1983: 3,070.7	3,000.1	70.6	2.3	24,607.2
1984: 4,438.7	3,995.8	442.9	4/ 10.0	26,093.2
1985: 5,927.7	4,753.0	1,174.7	19.8	28,817.5
1986: 4,367.5	2,807.9	1,559.6	35.7	29,240.4
1987: 3,080.5	1,515.0	1,565.5	50.8	28,147.6
1988: 2,320.7	1,065.8	1,254.9	54.1	28,242.6
1989: 2,229.6	1,030.1	1,199.5	53.8	26,525.6

1/ Obligations are the dollar amounts of funds loaned or guaranteed. 2/ Fiscal years. 3/ Total principal balance of loans guaranteed by FmHA and direct or insured FmHA loans at year-end. 4/ Includes \$289.9 million in guaranteed Economic Emergency loans.

Source: Farmers Home Administration, 616 Report, 4067 Report, and 205 Report, various issues.

Table 19--Farmers Home Administration major farmer program lending authority and obligations, fiscal 1989

Program	Lending Authority 1/	Obligations 2/
	-- Thous. dollars --	
Farm ownership (FO)		
Direct	95,000	94,933
Guaranteed	724,000	305,727
Operating loans (OL)		
Direct	932,500	856,018
Guaranteed	2,598,109	879,174
Emergency disaster (EM)	530,000	73,493
Interest rate buydown program	100,000	14,180

1/ Budgetary limits on the volume of loans that can be issued during the year. 2/ Actual amount of lending authority committed to loans or loan guarantees.

Source: Farmers Home Administration

Only 35 percent of the \$3.4 billion available for the guarantee loan programs was obligated during the year, reflecting weak demand for guarantees and greater lending authority. Guarantee lending authority was up \$500 million in 1989, while direct farmer program lending authority remained flat. Guarantee authority rose due to a transfer of unused lending authority from fiscal 1988's EM program.

Use of the guarantees by lenders continues to be below expectations. Most loans guaranteed by the agency continue to go to higher risk private or cooperative lender customers and not FmHA's direct loan customers. Commercial banks are the primary issuer of the guarantees. They have complained that paper work involved with participating in the program deters them from participating to the full extent possible. FmHA is working to further streamline its guarantee processing procedures.

Interest Rate Buydown program use continues to soften. The program provides interest rate assistance to guaranteed borrowers unable to project a positive cash flow. FmHA matches interest rate reductions offered to the borrower by the participating lender, up to 2 percentage points. One explanation for lenders' reluctance to use the program is the high degree of default that still exists with such high-risk loans. As a result, the interest rate buy-downs tend to go to the lenders' existing high-risk customers rather than new customers.

Emergency Disaster loans issued in fiscal 1989 doubled to \$73.5 million, far less than the \$530 million available. The increase was largely attributed to drought conditions in 1988 and 1989. However, lending activity was minor compared to the 1970's and early 1980's when annual obligations often totaled in the billions, and peaked at \$5.1 billion in 1981. A 1985 policy requiring the purchase of crop insurance before receiving emergency loans, and generous drought assistance legislation, minimized demand for the program.

Life Insurance Companies

During 1989, the agricultural mortgage portfolios of the life insurance companies improved, but the level of financial stress remained high in terms of earlier norms. Historically, agricultural real estate mortgages have been an important life insurance company investment and a key source of real estate loan funds. Approximately 38,500 agricultural mortgage loans were held by about 15 life insurance companies on June 30, 1989.

Delinquency rates based on the number of loans held by life insurance companies were lower for agricultural mortgages than for nonagricultural loans throughout the 1970's. The agricultural delinquency rate first exceeded the nonagricultural rate in June 1981, and it has done so continuously since June 1982 (table 20). The June 1987 agricultural mortgage delinquency value of 9.12 percent was the highest recorded since the American Council of Life Insurance initiated its survey in 1954. It has declined to 4.68 percent, still in excess of the rate on nonagricultural mortgages.

The delinquency rates on the volume of loans outstanding are proportionately higher for agricultural mortgages because the agricultural loans are larger on average. The per-

cent of agricultural mortgage debt that is delinquent has exceeded the nonagricultural rate since June 1978. The share rose to a record 19.85 percent in June 1986, but declined to 8.65 percent by June 1989 (table 20). The nonagricultural mortgage delinquency rate was 2.75 percent in June 1989. Some \$757 million of life insurance company agricultural mortgage loans were delinquent on June 30, 1989.

Agricultural mortgage foreclosure rates by number of loans have exceeded nonagricultural rates since June 1979, and stood at 2.35 percent in June 1989 (table 21), down from the record high 3.91 percent recorded 2 years earlier. A total of 904 life insurance company agricultural mortgage loans were in the process of foreclosure on June 30, 1989, down from the 1,915 on June 30, 1986.

Agricultural mortgage foreclosure rates by dollar amount of loans outstanding have exceeded nonagricultural rates since June 1978 and reached record levels in the 1980's (table 21). On June 30, 1986, a record 8.23 percent of the amount outstanding was in the process of foreclosure, but by June 30, 1989, it had declined to 4.67 percent. A total of \$408.7 million in life insurance company farm mortgage loans were in the process of foreclosure on June 30, 1989, down from the \$573.0 million of a year earlier.

The number and dollar amount of agricultural and nonagricultural loans actually foreclosed during 1980-89 are shown in table 22. Agricultural mortgage foreclosures rose each year of the 1980's until 1986 when they peaked at \$827.5 million. During 1982-85, the dollar amount of agricultural mortgage foreclosures even exceeded that for nonagricultural mortgages. Completed agricultural foreclosures declined to \$364.4 million in 1988 and to \$116.6 million for

Table 20--Life insurance company mortgage loan delinquencies, 1980-89 1/

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
	Percent			
1980 June	.95	.79	.79	2.82
Dec.	1.06	.54	.89	2.00
1981 June	.89	1.02	.73	4.04
Dec.	1.11	.77	.69	3.69
1982 June	1.03	1.70	.87	6.45
Dec.	1.07	1.66	.83	6.40
1983 June	1.04	2.99	1.04	9.82
Dec.	1.10	2.63	.90	8.27
1984 June	1.17	3.88	.93	10.38
Dec.	1.24	3.78	.90	9.58
1985 June	1.15	6.26	1.02	14.89
Dec.	1.43	6.34	1.16	15.06
1986 June	1.33	9.08	1.91	19.85
Dec.	1.64	8.30	2.65	17.01
1987 June	1.46	9.12	2.96	18.01
Dec.	1.60	6.83	2.61	14.31
1988 June	1.53	6.75	2.77	13.27
Dec.	1.74	4.44	2.44	8.87
1989 June	1.55	4.68	2.75	8.65

1/ Delinquent loans (including loans in the process of foreclosure). A delinquent loan is a nonfarm mortgage with interest payments in arrears at least 2 months (60 days if other than a monthly pay) or a farm loan with interest in arrears more than 90 days. Reporting companies account for approximately 80 to 85 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey.

Source: American Council of Life Insurance, Investment Bulletin, various issues.

Table 21--Life insurance company mortgage loans in the process of foreclosure, 1980-89 1/

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
	Percent			
1980 June	.08	.13	.18	.57
Dec.	.09	.17	.17	.72
1981 June	.11	.25	.15	1.18
Dec.	.12	.28	.23	1.20
1982 June	.12	.37	.24	1.63
Dec.	.16	.63	.29	2.41
1983 June	.18	.87	.29	2.60
Dec.	.16	.89	.31	2.60
1984 June	.16	1.14	.30	2.97
Dec.	.16	1.75	.18	4.54
1985 June	.17	2.16	.28	6.00
Dec.	.21	2.86	.31	7.11
1986 June	.25	3.42	.69	8.23
Dec.	.29	3.84	.84	7.83
1987 June	.37	3.91	1.11	7.98
Dec.	.41	3.02	1.07	6.43
1988 June	.46	3.36	1.16	6.33
Dec.	.45	2.60	1.22	4.83
1989 June	.43	2.35	1.38	4.67

1/ Reporting companies account for approximately 80 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey. Loans in foreclosure include those on which foreclosure action has been authorized, including any involved in a subsequent filing of bankruptcy. Beginning in 1988, the loans in foreclosure category includes loans in redemption period.

Source: American Council of Life Insurance, Investment Bulletin, various issues.

Table 22--Life insurance company mortgage loans foreclosed, 1980-89 1/

Year	Nonagricultural mortgages		Agricultural mortgages	
	Number	Thou. Dollars	Number	Thou. dollars
1980	549	63,237	26	18,160
1981	552	58,491	47	55,741
1982	760	131,392	167	170,310
1983	868	114,993	306	347,002
1984	1,024	242,428	475	289,251
1985	1,033	328,558	1,000	530,235
1986	1,541	1,143,082	1,654	827,472
1987	2,048	1,580,027	1,515	691,914
1988	1,196	2,530,105	727	364,414
1989 2/	556	979,961	203	116,600

1/ Loans foreclosed include those for which title to the property or entitling certificate was acquired during the period shown, either through foreclosure or voluntary conveyance in lieu of foreclosure. Dollar amounts include principal outstanding at the time of the foreclosure, amounts capitalized for interest, foreclosure costs and any advances made to protect the collateral. 2/ January 1 through June 30. Data beginning in 1988 are not strictly comparable with earlier years because of changes in the survey sample. Beginning in 1988 loans in redemption are classified as loans in process of foreclosure; in earlier years these loans were reported as loans foreclosed. For this reason there may be some double counting of foreclosed loans, particularly agricultural properties, beginning in 1988.

Source: American Council of Life Insurance, Investment Bulletin, various issues.

the first half of 1989 compared with \$185.8 million recorded in that same period of 1988. Life insurance company agricultural loan foreclosures during the 1980's through June 30, 1989, totaled \$3.41 billion, with 44.5 percent occurring during 1986-87.

Life insurance companies used a variety of policies in the 1980's to deal with problem farm loans, including loan extensions, renewals, sale of mortgages to secondary creditors, accepting deeds in lieu of foreclosure, and foreclosure.

Companies also employed a variety of approaches in 1989 to address borrowers' rights, Chapter 12, State loan mediation programs, and related activities. Companies often have felt that these programs have tilted the balance in favor of the borrower and have caused unnecessary delays in the resolution of debt problems. Some feel they have affected the flow of credit to farmers. Companies have adapted to the borrower rights policies, although they continue to complain about the time and added cost required to resolve delinquencies. Chapter 12 did not have the impact that was initially expected on either the industry's loan portfolio or its underwriting procedures. Chapter 12 was implemented after much of the farm financial stress of the 1980's had peaked. Chapter 12, borrowers' rights, lender liability suits, and State mediation programs will continue to diminish as the agricultural economy improves. Companies report that States using mediation programs are less desirable places to make agricultural mortgage loans. Many feel that the package of borrower rights programs and policies only slowed the inevitable course of events.

During 1989, companies continued to conduct orderly sales programs for farm property acquired via foreclosure or bankruptcy. On June 30, 1989, company holdings of acquired farm property totalled \$1.1 billion, down 12.5 percent from January 1 and 33.7 percent below the peak holdings at the end of 1987. Life insurance companies have tended to hold

on to foreclosed property longer than the other institutional lenders. The life insurance industry, due to the small dollar value of farm loans compared with total assets and their tightly regulated and aggressive internal management, was quick to foreclose when problem farm loans began to occur in the 1980's. Consequently, their land inventory grew quickly. Moreover, the life insurance companies could afford a more wait-and-see attitude toward future farmland price trends than could the FCS, where farmland is the primary asset. In 1989, the continued increases in farmland values afforded the life insurance companies the opportunity to sell acquired property at acceptable terms. Companies varied in how aggressive they were in selling acquired property.

In 1989, life insurance companies differed in how aggressive they were in seeking new loans. Some, stung by earlier problems, were out of the market. Some companies offered funds only for renewals or increases of existing good loans. Those companies active in the market reported more funds available than there were qualified agricultural borrowers. Potential borrowers continued to be cautious and competition among lenders was keen for quality, new mortgage loans.

The policies of the life insurance companies varied toward the new Farmer Mac established under the Agricultural Credit Act of 1987. A number of the companies were very active in developing this legislation and worked hard in 1988 and 1989 toward the eventual establishment of the market. Other companies with agricultural mortgage portfolios have taken a cautious attitude. Opinions vary on the future potential of Farmer Mac and the earnings that might be garnered by participation in the secondary market.

Current Agricultural Lender Outlook

The outlook for farm lenders in 1990 is quite favorable. Overall, the financial position of farmers is stronger than at any time since the early 1980's. Except in areas negatively impacted by weather problems, delinquencies should continue to decline and loan quality improve. Commodity sales are expected to provide strength, farm cash income will be higher, farm asset values should continue to rise, overall farm financial stress will be less, returns to farm equity will be positive for the fourth year in a row, and farm debt will expand slightly. These positive developments, plus substantial levels of Government payments, will afford lenders a continuing opportunity to make quality new loans, restructure existing problem farm loans, and sell acquired property. The agricultural finance industry will support stricter underwriting standards and further development of new tools such as the secondary mortgage market.

Commercial Banks

Agricultural bank health will remain strong in 1990. Profitability should increase slightly as nonperforming loans decline. However, a continuation of dry conditions in some regions could slow or reverse that decline. Should that occur, farm banks are well positioned to deal with the effects because their capital levels are the highest since the beginning of the 1980's.

Commercial banks, especially farm banks, have ample funds to meet expected increases in credit demand. Loan-to-deposit ratios have edged up for 2 consecutive years but bankers say they are still well below desired levels. Credit extension will still be conditioned on quality considerations as both bankers and their regulators seek to avoid a repeat of the mid-1980's.

Around 1,500 banks, largely in the Midwest, have purchased shares in Farmer Mac, the secondary market for agricultural mortgages which is expected to be operational in 1990. A favorable ruling by the Office of Comptroller of the Currency regarding the level of risk that bank capital must bear when the mortgages are sold in the secondary market should help ensure that banks participate.

Both total and agricultural bank failures should be lower in 1990. The failing banks will again be mainly in Southcentral energy-producing States. However, areas suffering continued drought or near drought are also likely to see a few failures. The number of weak banks, an early indicator of failures, will continue a slow decline, barring unforeseen economic reversals. They will, however, remain troublingly high for this point in the business cycle.

Over the longer run, small banks, which include most agricultural banks, face significant management challenges as a result of deregulation and innovation in financial markets. Current performance measures show that, while profitable and well capitalized, small banks are lagging behind large banks in several areas. Further, large nonagricultural banks currently fund nearly a quarter of commercial bank farm credit and with agricultural sector health restored may seek to expand that even more.

Farm Credit System

Most of the significant challenges and changes that the FCS faces in 1990 will be internal. To retain and/or expand its share of the farm credit market, the FCS is becoming more competitive by cutting overhead and expanding services.

The Farm Credit Corporation of America, the FCS administration and information center, is expected to be approved soon for liquidation. Its current responsibilities will be split between the Farm Credit Council in Washington D.C., and the Farm Credit System Funding Corporation in New York

City. The FCS Funding Corporation will take over all financial services, while the Credit Council will become a full service trade organization.

The FCS is continuing to petition Congress for an extension of its lending authorities for rural housing, agriculture-related businesses, and rural infrastructure. The FCS currently is restricted in rural housing lending to communities with a population of no more than 2,500. Possible changes include either increasing the limit to 10,000 or 20,000, the latter with the proviso that credit extended in communities with populations between 2,500 and 20,000 be sold through Farmer Mac. Two extensions with respect to agriculture-related businesses are under discussion. One involves discarding the requirement that the FCS only lend to the portion of a nonfarm business concern that directly services agriculture. The other is concerned with revoking the 20-percent minimum requirement for through-put in farm direct marketing financed by the FCS. As it stands now, farms must sell at least 20 percent of their own product through their direct marketing operation in order for that operation to be eligible for FCS financing.

The Assistance Board set up to administer financial aid provided for in the Agricultural Credit Act of 1987 has not authorized sufficient funds to the Jackson FLB to allow the bank to satisfy its obligations as they come due. Since the debt is the joint and several liability of all System institutions, the FCA, acting for the Jackson FLB, may be forced to call on other banks to help satisfy the Jackson FLB financial obligations. A call by the FCA might in turn force other banks to seek capital assistance from the Assistance Board and/or require subsequent forbearance from the FCA on the higher capital adequacy standards imposed by the FCA in early 1989.

Farmers Home Administration

The farm loan portfolio of the Farmers Home Administration should continue to shrink in 1990 as the agency cleans up delinquent loans and new lending activity fails to keep pace with repayments. Accordingly, delinquent loan volume should continue to decline, but loan write-offs should remain near levels of recent years. FmHA will continue to actively restructure loans under the guidelines established by the Agricultural Credit Act of 1987.

Demand for FmHA credit should remain relatively soft in 1990 as the overall farm economy continues to improve. Demand for direct operating loans will be influenced by the outcome of current debt restructuring activities. Lending authority for FmHA's direct operating loan and farm ownership programs could be exhausted by yearend if adjustments are not made. There is \$80 million available for farm ownership loans and \$900 million for operating loans. Both authorizations have been trimmed slightly from fiscal 1989.

FmHA will need to continue a substantial direct loan program for the immediate future if its borrowers are to remain in farming because many are in such poor financial shape they could not graduate to private credit sources, even if the agency were to guarantee their loans.

Guaranteed lending activity will likely remain flat for 1990—largely reflecting the improving financial condition of farmers and continued reluctance by some lenders to use the program to its full extent. Authorization for issuing guarantees decreased slightly in fiscal 1990. FmHA has authority to guarantee nearly \$2.6 billion in operating loans and \$469 million in farm ownership loans. Factors that could spur greater guarantee use by lenders include the possible start-up of a secondary market operation and any further streamlining of guarantee processing procedures.

Barring another major drought or other natural disaster, use of the Emergency Disaster loan program should decline and again fall well short of the \$600 million authorized.

Future policies concerning the FmHA's farmer programs will receive attention in the 1990 farm bill debates. Issues likely to be debated include how to expand guarantee program use for existing direct borrowers and how to better target FmHA's programs to beginning and family-sized farms. Policy discussions could explore ways to return FmHA to its original role as provider of supervised credit for beginning or disadvantaged farmers. Any large increase in direct lending authority seems unlikely, given current budgetary constraints.

Life Insurance Companies

The 1990 financial outlook for the life insurance farm mortgage loan portfolio shows continued improvement and opportunity. Life insurance companies report several positive developments: (1) continued improvement of the financial condition of the agricultural sector; (2) servicing of delinquent loans and management of foreclosed properties is demanding much less resources; (3) new loans are being underwritten based on past and conservatively projected earnings as opposed to value of the security; (4) mortgage

terms are now somewhat longer and provide more stable long-run plans for the farmer, also plenty of short-term credit for qualified borrowers; (5) ample supplies of credit are available from both institutional and Government lenders; (6) borrowers are becoming more sophisticated in their record keeping and borrowing habits; and (7) the implementation of the Farmer Mac secondary mortgage market.

This improved outlook comes on the heels of a period when life insurance companies had foreclosed on a relatively large amount of farm loans and absorbed considerable losses. In 1990, loan delinquencies and defaults will remain higher than in recent decades, but the trend will continue downward to levels experienced in 1982-83.

The many adjustments of the 1980's have led to smaller, but financially sounder farm loan portfolios. There will be increased opportunities in 1990 for life insurance companies to make profitable farm mortgage loans, but the competition will be keen for the better-quality loans. Insurance companies will view agricultural lending with significant caution. The industry will continue disposing of acquired farm property in 1990 as farmland values rise. The goal is to sell farms acquired through foreclosure at the appropriate time as dictated by costs incurred and potential benefits.

The development of the secondary market for farm mortgage loans should have some impact on the farm mortgage markets in 1990. The life insurance companies will closely follow the secondary market development and will evaluate their options. A few of the companies will likely play a major role in the new secondary market.

The companies feel that there are several emerging issues that will shape future lending practices: (1) the profitability of farm borrowers; (2) the degree of success of the Farmer Mac secondary mortgage loan process; (3) the efforts of the agricultural lending industry in moving toward improved financial reporting standards; (4) recognizing and dealing effectively with the costs and risks associated with environmental concerns; and (5) the 1990 farm program.

Farm Financial Stress and Farm Exits in the 1980's

by

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Abstract: During much of the 1980's, concern with financial stress in agriculture was often stated in terms of increased farmer exits from farming because of bankruptcy, foreclosure, or other involuntary reasons. An estimated 200,000 to 300,000 farm businesses failed for financial reasons between 1980 and 1988, representing 8 to 12 percent of all farmers at the beginning of the decade. Exits from farming in the 1980's were slowed by a variety of Federal and State programs and policies; many were specially introduced in response to the farm financial crisis. Farm numbers declined by 266,600 during 1980-89, compared with 1.7 million during the 1950's, 1 million during the 1960's, and 510,000 during the 1970's. When adjustments are made in farm numbers because of the 1974 change in farm definition, the average annual decline for 1980-89 was almost the same as for 1970-80.

Keywords: Financial stress, farm numbers, foreclosure, bankruptcy, income, credit, debt.

Introduction

Changes in the number of farms produce broad interest among policymakers, farm and rural development advocacy groups, agribusiness interests, and certain segments of the media. Declines in farm numbers are believed to adversely affect the well-being of rural economies, and may affect the approaches pursued by agribusiness firms that market agricultural commodities or supply farm inputs. Changes in farm numbers are considered important because of their impact on demographic, socioeconomic, and service characteristics of rural areas. Policymakers must often consider how farm numbers will be influenced by economic policies that affect farm prices, income, or general economic conditions.

The result of numerous interrelated economic changes in the 1980's was the severest financial stress for the farm sector since the Great Depression of the 1930's. Financial stress can have a variety of meanings, but it generally is regarded as when a farm household does not have sufficient cash available to meet the cash expenses of the farm operation, family living, and scheduled debt service.

The farm sector financial problems of the 1980's generally arose not because of an overall lack of efficiency. Rather, the distinguishing feature was that the amount of debt held was excessive as measured by the economic environment of the decade. The large debts incurred during the late 1970's and undercut by declining land values in the 1980's generally were not the problem as much as the challenge of

absorbing large capital losses. Since 1981 the balance sheet of the farm sector has undergone significant changes. Agriculture's vulnerability stems from its comparatively high level of capital intensity and the relatively low rate of returns on assets. This combination ensures that U.S. agriculture is highly affected by interest rate changes.

The 1980's farm financial stress exacerbated a long-run concern about farm numbers. Farm numbers continued to decline during the past 60 years, despite a continued increase in farm productivity and little change in cultivated acres. The farm crisis of the 1980's once again drew national attention to financial conditions in agriculture, farm exits, and the structure of the farm sector. As the farm sector faces the 1990's, it is leaving a generally tumultuous decade.

Financial Stress and Farm Exits

Long-run changes in farm numbers occur via the entry and exit of farm operators. Entry and exit is comprised of three components. First is the regular and predictable component resulting from the aging and eventual retirement of current farmers. Second is the early departure of established farmers. This is a more variable component and often the topic of public interest and debate, as demonstrated during the 1980's. Third and often less monitored is the entry rate of new farmers.

The secular flow of labor out of agriculture, bankruptcy, and other forms of forced exits, and changes in the structure of the farm sector have long been topics of interest to researchers and public policy analysts. In the 1980's, however, the worst farm financial stress in a half century caused the increased farm bankruptcies and foreclosures to be seen by some as a leading indicator of farm sectoral problems. Con-

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siderable concern was expressed by certain parts of the media and other observers in response to the number of forced farm exits that were occurring.

A key problem arose because there is no evidence of the validity of the claim that increased farm bankruptcies and foreclosures are leading indicators of farm sector stress. Nobody knows exactly how many forced exits occurred in the 1980's. The rate of bankruptcy in the farm sector would provide some indication of financial stress. However, farms also can fail due to loan foreclosures and voluntary liquidations. Bankruptcy filing statistics that specified the filer's occupation were recorded by the Administrative Office of the U.S. Courts through October 1979, when collection of this information was terminated under the Bankruptcy Reform Act. There was no longer any distinction made between farm bankruptcies and those of other businesses after this date.

USDA for many years collected data on the number of farm ownership transfers per thousand farms by type of transfer, including voluntary, estate settlement, foreclosure, and others. This survey, which reported useful information on farm foreclosures, was discontinued after 1981 because of methodological problems.

The lack of detailed bankruptcy and foreclosure data presents a major hurdle in analyzing farm exits in the 1980's. But even if excellent farm bankruptcy and foreclosure data existed, challenges would remain. Farm financial stress induced many farmers to sell or transfer land in ways to avoid bankruptcies or foreclosures. Despite the lack of data, there is some related information that suggests that farm failures, while serious for those directly involved in them, have a limited impact on the sector as a whole. The lack of bankruptcy and foreclosure data forces one to look for other information on farm exits.

Changes in farm numbers are often assumed to be linked on a one-to-one basis with changes in exits. As a result, the higher rate of exit during the 1980's due to foreclosures and bankruptcies has been used as a proxy for rapid declines in farm numbers. In short, the allegedly more rapid decline in farm numbers that occurred in the 1980's was assumed to reflect greater numbers of foreclosures and bankruptcies. Although there is certainly a strong link between forced exits and changes in the rate of decline in farm numbers, the process is more complex. Two additional factors must be considered. The first is the rate of entry into agriculture, (which was lower in the 1980's than the late 1970's) and the second the extent to which forced exits replace voluntary exits.

If new entrants occur for all exits there will be no net change in farm numbers. Gross exits and gross entries can be large or small numbers under this condition as long as both are the same. Thus, using gross exits without considering

entries tells little about net changes in farm numbers. Further, observing only a single component of the gross exit number, say involuntary exits, cannot necessarily indicate that the aggregate exit rate changes similarly. For example, voluntary sales may decline in a period of financial stress as those with the ability to wait for improved conditions hold their land off the market.

In a normal year, 3 to 4 percent of farm operators cease farming for a variety of financial and personal reasons. In periods of economic stress, farm exits due to financial reasons increase. But the number of farmers who are forced to take voluntarily actions to cease operating is problematic. Evidence suggests that some displaced farmers with good management skills re-enter the sector, renting a large share of their land and equipment. This type of transition likely increased in the 1980's. As noted above, there are no exact national numbers on the rates of farm failure. Some observers felt that the farm exit rate was 5 to 6 percent annually when farm financial stress peaked during the mid-1980's, with financial failure accounting for about one-half of the exits. Thereafter, the exit rate appears to have dropped back to the historical norm as the financial picture brightened.

The process of farm exit is complex. There are a variety of factors involved, such as the disposal of farm assets and debts, the impact on rural communities, finding new employment, and dealing with the psychological adjustment of farm loss. The process of farm exits also often requires considerable time. Research has shown that some operators reaching insolvency have been able to postpone loss of their farm for years, thus suggesting the farm crisis is a complex and slowly unfolding process. Farmers unable to obtain further credit do not necessarily cease operation immediately, but may continue in business with the funds from off-farm income, short-term credit from suppliers, and personal loans. Some remain in operation several years, despite nonpayment of debts, and many are negotiating with creditors.

Estimates are scarce of the actual number of farms that failed nationally in the 1980's or that likely will fail in the future because of the financial stress of the 1980's. Best estimates suggest that some 200,000 to 300,000 farmers became bankrupt, foreclosed, and/or were financially restructured because of financial stress between 1980 and 1988, representing 8 to 12 percent of all farmers at the beginning of the decade (or an annual average rate of 0.9 to 1.4 percent). Despite their business failure, a number of these operators remained in farming, but typically at a greatly reduced scale of operation.

Families leaving agriculture in the 1980's because of farm financial stress received much public attention. Many observers believed that farm exit and financial stress were always linked. Even during the farm financial crisis of the 1980's, this was not true. The majority of exits occurred because of other reasons.

Financial Stress Worst in 1985-86

The financial problems of the farm sector were increasingly passed to farm lenders in the 1980's, and the impact was substantial. Commercial banks, the Farm Credit System, and the Farmers Home Administration had combined farm loan losses of \$5.617 billion during 1985 and 1986. Life insurance companies foreclosed on \$1.357 billion in farm loans during the same 2 years. Actual farm sector losses indicate that the years 1985 and 1986 were the worst years of the farm crisis.

One valuable source of information on farm financial stress and forced exits is a midyear farm credit survey conducted by the American Bankers Association (ABA). The survey polls agricultural banks regarding the conditions of both their farm customers and farmers in their local lending areas. Beginning in 1982, the survey has included questions that address discontinuance of financing, liquidations, bankruptcies, and failures. The survey is distributed to a probability sample drawn from the 4,500 banks qualifying as agricultural banks according to established criteria. To qualify as a farm bank, the institution either has to have more than \$2.5 million in farm production and farm real estate loans, or has to have more than 50 percent of its loan portfolio in farm lending. Banks are stratified by asset size and region.

Bankers responding to the survey likely focus on commercial-sized farms that are viewed as actual or potential bank customers and do not include the small acreages that meet the census definition of a farm (\$1,000 or more in annual sales). Thus, the stress numbers should not be multiplied times the total census number of farms, but, instead, viewed as relative indicators through time.

The indicators of financial stress in agriculture as reported by farm banks were highest in 1985-86 (table A-1). Farm loan volume delinquent 30 days or more was 5.3 percent in 1985, peaked at 6.0 percent in 1986, but dropped to 1.6 percent in 1988. The ABA respondents discontinued financing for 5.6 percent of their farm borrowers during the year ending June 1986 after dropping 4.5 percent in 1985. They expected to discontinue 6.7 percent in the year beginning July 1986, compared with 5.7 percent in 1985. Another measure of creditworthiness, the proportion of farm customers loaned up to their practical limit, peaked at 38.8 percent in mid-1986, after reaching 36.7 percent—the second highest—a year earlier.

Agricultural banks estimated that 6.2 percent of farmers in their lending areas went out of business during the year ending June 1986, up from 4.8 percent a year earlier. About 68 percent of these were thought to have left in 1986 because of

Table A-1--Indicators of financial stress in agriculture as reported by farm banks, by region, 1982-88 1/

Item	United States							Northeast 2/							Corn Belt 3/						
	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:
	Percent																				
Farm loan volume delinquent 30 days or more (June).....	3.9	3.7	4.5	5.3	6.0	2.7	1.6	3.4	3.5	5.3	6.9	6.9	2.9	1.4	4.0	3.5	4.3	5.2	5.4	2.3	1.5
Banks' farm borrowers who had bank financing discontinued (during the year ending June)....	3.3	2.9	3.4	4.5	5.6	3.2	1.7	2.8	2.7	3.5	4.7	6.2	3.3	1.8	2.8	2.5	3.0	3.8	4.8	2.9	1.5
Farm borrowers banks expect to discontinue (during year ending next June).....	4.4	2.0	3.1	5.7	6.7	2.1	1.5	3.5	1.8	3.2	6.0	6.8	2.3	1.6	4.2	1.5	3.0	5.3	5.5	1.6	1.6
Banks' farm borrowers loaned-up to practical limit in June.....	31.9	28.1	32.8	36.7	38.8	28.8	22.6	26.1	26.7	30.1	34.4	37.1	28.3	20.1	27.3	26.0	31.2	34.7	34.3	24.9	21.9
Farmers in bank lending area who went out of business (year ending June).....	2.2	2.3	3.6	4.8	6.2	4.6	2.8	1.8	2.0	3.4	4.9	7.1	5.5	3.3	1.9	2.2	3.6	4.6	5.5	4.1	2.7
Liquidation categories (sum equals 100%)																					
Normal attrition.....	NA	37.7	31.3	27.7	28.9	38.4	50.2	NA	43.3	32.1	30.5	28.2	37.7	48.6	NA	39.5	35.8	29.9	33.8	43.0	58.7
Voluntary liquidation....	NA	42.4	44.0	44.3	41.7	35.8	30.6	NA	38.9	45.3	46.0	41.7	36.9	35.0	NA	38.6	40.1	42.3	36.9	33.6	26.3
Legal foreclosure.....	NA	18.1	22.3	25.8	26.3	23.6	17.7	NA	15.8	20.7	21.9	26.3	23.4	15.4	NA	20.0	20.4	26.3	25.6	20.7	14.7
Other.....	NA	1.8	2.4	2.2	3.1	2.3	1.6	NA	2.4	1.0	1.5	3.8	2.1	1.0	NA	1.7	3.1	1.5	3.7	2.6	.4
Banks' farm borrowers who filed for bankruptcy (year ending June).....	NA	NA	NA	1.5	2.2	1.4	.7	NA	NA	NA	2.0	1.7	1.4	.7	NA	NA	NA	1.4	2.1	1.5	.7
Farmers in bank lending area who filed for bankruptcy (year ending in June).....	.8	1.1	2.6	3.8	4.2	3.3	2.2	.4	1.0	2.6	4.0	3.9	3.3	2.4	.7	1.0	2.3	3.3	4.0	3.4	2.0

See footnote at end of table.

Continued --

Table A-1--Indicators of financial stress in agriculture ■■ reported by farm banks, by region, 1982-88 -- Continued 1/

	South 4/							Plains 5/							West 6/						
Item	'82:	'83:	'84:	'85:	'86:	'87:	'88	'82:	'83:	'84:	'85:	'86:	'87:	'88	'82:	'83:	'84:	'85:	'86:	'87:	'88
	Percent																				
Farm loan volume delinquent 30 days or more (June).....	4.6	4.3	4.0	4.2	5.2	3.0	1.3	3.7	3.5	4.1	4.4	6.6	2.9	1.9	5.0	4.5	5.0	8.0	5.2	3.2	2.3
Banks' farm borrowers who had bank financing discontinued (during the year ending June)...	6.4	4.4	4.5	6.9	8.6	5.3	1.6	3.3	3.0	3.7	4.4	5.1	3.2	1.8	3.3	3.3	2.8	3.8	5.7	2.3	1.7
Farm borrowers banks expect to discontinue (during year ending next June).....	7.7	2.7	2.4	6.9	12.4	3.6	1.5	4.5	2.6	3.4	5.8	6.5	2.0	1.4	2.5	2.1	3.1	4.7	5.9	2.5	2.0
Banks' farm borrowers loaned-up to practical limit in June.....	49.0	40.5	45.9	47.4	49.7	38.4	28.7	31.9	27.0	30.1	35.1	39.8	29.5	22.6	40.9	32.1	39.5	43.8	44.4	34.8	25.0
Farmers in bank lending area who went out of business (year ending June).....	3.9	3.1	4.4	5.6	8.9	6.5	2.7	2.1	2.4	3.8	4.9	5.6	4.2	2.7	2.2	2.3	3.0	4.3	6.3	4.6	2.7
Liquidation categories (sum equals 100%)																					
Normal attrition.....	NA	22.8	22.3	19.1	17.9	23.4	32.5	NA	38.3	30.0	28.3	30.5	38.8	51.1	NA	30.2	26.7	19.1	17.7	31.5	26.8
Voluntary liquidation...	NA	48.3	41.3	44.5	50.7	41.8	34.9	NA	45.5	45.5	45.2	42.5	35.2	29.5	NA	48.7	50.4	45.3	46.7	39.4	41.3
Legal foreclosure.....	NA	25.8	31.4	34.2	28.3	31.6	29.9	NA	15.1	23.2	23.9	24.7	23.9	16.5	NA	19.4	19.6	20.3	33.2	28.0	29.7
Other.....	NA	3.1	5.3	2.2	3.1	2.6	2.7	NA	1.1	1.7	2.6	2.3	2.1	3.0	NA	1.7	1.7	5.3	2.4	1.1	2.2
Banks' farm borrowers who filed for bankruptcy (year ending June).....	NA	NA	NA	2.0	2.5	2.0	1.1	NA	NA	NA	1.0	2.5	1.2	.7	NA	NA	NA	1.8	1.9	1.3	.5
Farmers in bank lending area who filed for bankruptcy (year ending in June).....	.1	1.9	4.9	5.7	6.5	5.9	3.3	.8	.9	2.3	3.7	3.9	2.6	2.0	.5	1.2	2.3	3.5	3.5	3.0	2.0

NA= Not available. 1/ Data are unweighted averages of responses to the American Bankers Association midyear farm credit survey, which uses ■ stratified random sample. 2/ CT, DE, DC, ME, MD, MA, MI, MN, NH, NJ, NY, PA, RI, VT, WI. 3/ IL, IN, IA, MO, OH. 4/ AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV. 5/ KS, NE, ND, OK, SK, TX. 6/ AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY.

Source: American Bankers Association.

financial problems (liquidation or foreclosure), slightly less than the 70 percent in 1985. Responding bankers estimated that 4.2 percent of local farm operators filed for bankruptcy during July 1985 - June 1986, up from 3.8 percent in 1985. They also reported the highest bankruptcy rate for their own customers of 2.2 percent during July 1985 - June 1986. On a regional level, the ABA survey reveals some diversity in farmers' financial experience (table A-1). Regional farm financial stress indicators generally peaked in 1985-86. Most striking is the economic stress in the South, which generally led in most indicators of financial stress. Drought, cotton farm conditions, and the contraction of the energy sector appear to have accentuated southern farmers' difficulties. During 1982-85, the Plains was second to the South in the proportion of farmers going out of business and bankruptcy rates. But the Northwest moved into second place during 1986-88.

There also was considerable diversity in farmers' financial stress by type of farming area (table A-2). Areas dominated by cotton farms showed above-average stress, according to banks' responses. Beef cow-calf and dairy areas also showed above-average financial stress, but not to the extent exhibited by cotton farms.

Changes In Farm Numbers in the 1980's

The bottom line in the farm exit question is the change in net numbers of farms (exits balanced against entrants). Total farm numbers declined 266,600 between 1980 and 1989, or 10.9 percent from the 1980 base (table A-3). This was the lowest rate of decline since the 1940's, when 11.1 percent left the sector. In absolute numbers, it is the smallest decline since the 1930's, when 195,800 farms disappeared. It also is dwarfed by the 1.7-million decline in farm numbers recorded in the 1950's. Average farm size increased only 7.0 percent during 1980-89, the lowest rate since the 10.8-percent increase in the 1930's. This compares with ■ high of 39.4 percent recorded in the 1950's. (See footnote 1 of table A-3 for information on the effect of definitional changes on farm numbers.)

Conclusions

Families leaving agriculture in the 1980's received considerable national attention, but the numbers have been relatively small by historical standards. At the onset of the financial stress in the 1980's, U.S. agriculture already had experienced over ■ half century of dramatic decline in the use of

Table A-2--Indicators of financial stress in agriculture as reported by farm banks, by type of farming area, 1982-88 1/

	Feed & food crops								Dairy								Beef, cow-calf							
Item	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:			
	Percent																							
Farm loan volume delinquent 30 days or more (June).....	4.0	3.5	4.4	5.3	6.6	2.7	1.6	3.6	3.8	5.3	6.2	5.3	2.8	1.7	4.5	4.5	4.8	6.0	6.8	2.9	2.2			
Banks' farm borrowers who had bank financing discontinued (during the year ending June)...	3.1	2.7	3.4	4.3	5.5	3.1	1.5	3.4	3.1	3.2	5.4	5.4	2.9	1.8	2.9	3.9	3.1	3.4	5.8	3.8	1.5			
Farm borrowers banks expect to discontinue (during year ending next June).....	4.4	1.9	3.2	5.8	6.6	1.9	1.5	4.4	1.9	2.7	5.4	5.8	1.9	1.7	4.0	2.4	3.3	5.8	7.9	2.7	1.5			
Banks' farm borrowers loaned-up to practical limit in June.....	34.5	27.2	33.9	33.0	39.2	27.5	22.3	25.4	25.7	27.4	34.6	33.8	26.2	18.7	35.0	32.5	34.9	38.0	35.0	31.3	24.3			
Farmers in bank lending area who went out of business (year ending June).....	2.2	2.2	3.6	4.8	5.9	4.4	2.7	1.8	2.6	3.5	4.8	7.3	5.1	3.2	2.3	2.4	3.5	4.9	6.4	4.7	2.5			
Liquidation categories (sum equals 100%)																								
Normal attrition.....	NA	37.4	33.0	27.6	29.7	40.6	54.8	NA	41.3	31.8	32.0	29.6	41.5	47.7	NA	32.4	28.0	28.9	26.9	32.9	40.9			
Voluntary liquidation...	NA	42.6	43.0	43.7	40.6	35.6	28.1	NA	39.1	44.2	45.3	41.2	34.5	34.8	NA	48.5	46.6	41.8	42.4	34.9	31.4			
Legal foreclosure.....	NA	18.4	21.8	26.7	26.6	22.0	16.3	NA	16.8	20.5	20.1	24.5	21.2	15.1	NA	18.0	22.5	28.8	28.5	27.8	22.7			
Other.....	NA	1.8	2.4	2.0	3.1	1.8	.9	NA	2.5	2.4	2.6	4.7	2.8	2.5	NA	1.8	1.1	.5	2.1	4.4	5.0			
Banks' farm borrowers who filed for bankruptcy (year ending June).....	NA	NA	NA	1.4	2.3	1.6	.7	NA	NA	NA	2.2	1.4	1.1	.9	NA	NA	NA	1.3	1.4	1.3	.6			
Farmers in bank lending area who filed for bankruptcy (year ending in June).....	.7	1.0	2.2	3.6	4.3	3.5	2.0	.5	.9	3.9	4.1	3.3	2.6	2.5	.9	1.3	2.0	4.9	3.6	3.1	2.4			

See footnotes at end of table.

Continued --

Table A-2--Indicators of financial stress in agriculture as reported by farm banks, by type of farming area, 1982-88 -- Continued 1/

	Beef, feedlots								Hogs, other livestock								Cotton							
Item	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:	'82:	'83:	'84:	'85:	'86:	'87:	'88:			
	Percent																							
Farm loan volume delinquent 30 days or more (June).....	3.4	3.7	4.5	6.7	4.3	2.5	0.8	3.0	3.8	3.3	4.5	4.3	2.1	1.3	5.2	3.9	6.5	4.1	4.6	2.3	1.4			
Banks' farm borrowers who had bank financing discontinued (during the year ending June)...	2.8	2.2	5.1	6.0	5.7	2.6	2.2	2.8	2.6	2.7	3.8	3.9	2.7	.9	5.2	3.5	3.7	8.6	7.1	4.7	2.2			
Farm borrowers banks expect to discontinue (during year ending next June).....	3.8	1.6	4.7	7.8	5.7	2.0	1.8	7.1	3.7	2.9	4.7	4.2	2.0	1.2	5.7	2.5	1.8	7.2	11.6	2.1	1.9			
Banks' farm borrowers loaned-up to practical limit in June.....	37.9	27.8	43.4	40.1	42.6	31.6	24.7	27.4	29.8	25.7	35.0	28.1	24.4	22.7	41.2	33.9	56.3	50.1	52.1	44.3	26.6			
Farmers in bank lending area who went out of business (year ending June).....	1.7	1.9	3.9	4.1	5.4	4.6	3.7	1.6	1.9	3.5	4.5	4.8	3.4	2.1	4.8	2.8	3.0	6.7	8.1	5.3	3.1			
Liquidation categories (sum equals 100%)																								
Normal attrition.....	NA	36.6	21.9	15.5	18.7	32.0	51.1	NA	44.9	31.1	21.6	36.3	37.9	41.4	NA	26.4	19.3	18.2	17.2	22.6	48.4			
Voluntary liquidation...	NA	44.5	45.4	60.1	44.0	39.0	34.7	NA	38.7	49.5	51.9	42.9	35.9	45.7	NA	53.6	53.7	50.1	47.2	36.7	27.6			
Legal foreclosure.....	NA	18.3	30.7	22.0	34.8	27.9	14.3	NA	14.5	17.1	22.2	20.5	25.3	11.4	NA	19.1	25.3	28.8	30.7	38.2	23.0			
Other.....	NA	.6	1.9	1.8	2.5	1.1	.0	NA	.6	2.3	4.4	.3	1.0	1.4	NA	.3	1.7	2.9	4.9	2.5	.9			
Banks' farm borrowers who filed for bankruptcy (year ending June).....	NA	NA	NA	.6	3.5	1.3	.6	NA	NA	NA	1.9	.9	.8	.3	NA	NA	NA	1.6	4.8	2.0	1.3			
Farmers in bank lending area who filed for bankruptcy (year ending in June).....	.4	.5	3.1	2.1	6.1	2.6	2.3	.7	2.2	1.5	3.0	3.2	2.6	2.1	1.7	.7	2.4	3.4	5.9	3.9	2.5			

NA= Not available. 1/ Data are unweighted averages of responses to the American Bankers Association midyear farm credit survey, which uses a stratified random sample.

Source: American Bankers Association.

Table A-3--Number of farms, land in farms, and average farm size, United States, 1910-89 1/

Year	Number of farms	Land in farms	Average farm size	Change			
				Time period	Number of farms		
	Thou.	Mil. acres	Acres		Thou.	Pct.	Av. annual change
1910	6,406.2	878.8	137	---	---	---	---
1920	6,517.5	958.7	147	1910-20	111.3	1.7	0.17
1930	6,545.6	990.1	151	1920-30	28.1	0.4	0.04
1940	6,349.8	1,065.1	168	1930-40	-195.8	-3.0	-0.30
1950	5,647.8	1,202.0	213	1940-50	-702.0	-11.1	-1.11
1960	3,962.5	1,175.6	297	1950-60	-1,685.3	-29.8	-2.98
1970	2,949.1	1,102.4	374	1960-70	-1,013.4	-25.6	-2.56
1980	2,439.5	1,038.9	426	1970-80	-509.6	-17.3	-1.73
1989	2,172.9	991.5	456	1980-89	-266.6	-10.9	-1.21

1/ The data reflect the farm definition in effect for each year shown. Definitional changes in 1950, 1959, and 1974 made the definition of a farm somewhat more restrictive. It is estimated that 150,000 to 170,000 of the decrease in farms for the 1940-50 period was the result of the change in the farm definition in 1950. Places not counted as farms in 1959 but qualifying as farm according to the previous definition totaled 232,059. Agricultural operations excluded by the 1970 definition totaled 152,110 farms. Adding these respective totals to the 1950, 1960, and 1980 farm numbers would alter the decline in the number of farms. The 1940-50 decline would be 8.5 percent and not 11.1 percent (based on 160,000 farms being lost in 1950 because of redefinition). The adjusted 1950-60 decline from the 1950 base would be 25.7 percent instead of 29.8 percent and the 1970-80 decrease would be 12.1 percent instead of 17.3 percent. Assuming that the 152,110 farms affected by the 1974 definitional change left the sector at the same rate as all other farms during the 1974-80 period, would have resulted in an overall average annual rate of decline in farm numbers for the time span of 1.25 percent, or just slightly above the 1.21 percent of the 1980-89 period.

Sources: All data derived from USDA, NASS sources except for 1910-40 land in farms numbers which were obtained from the U.S. Census of Agriculture.

labor, major technological change, and a concomitant move to larger farms. The decade began with a considerable number of producers vulnerable to the sudden shift in economic forces that occurred.

There are a complex set of factors that determine the number of farms. The decline in farm numbers in the 1980's was

mitigated by a number of forces. A number of Federal and State programs and policies were implemented to alleviate farm financial stress. Evidence suggests that these programs and policies played an important role in assisting the farm sector and its suppliers. Farm financial stress peaked during 1985-86 and conditions generally have improved since.

Trends in Agricultural Interest Rates

by

James T. Ryan and George B. Wallace ¹

Abstract: Economic forces and deregulation of financial markets during the 1980's created pressures for agricultural interest rates to align more closely with those in money and capital markets. Interpretation of data series for agricultural and nonagricultural interest rates generally supports this contention. Farm Credit System access to national bond markets appears to allow the FCS to buffer the effects of market forces which have affected commercial bank interest rates. Probably as a result of an implied government guarantee, FCS rates do not reflect a true risk premium and thus move independently of other financial market forces and are more directly related to the financial position of the FCS as a whole.

Keywords: Interest rates, financial stress, debt, creditors.

Overview

The farm financial problems of the 1980's affected virtually all participants in the agricultural economy. While reduced incomes rendered many farmers unable to pay debts, the resultant loss of interest income and subsequent loan charge-offs made lenders involuntary partners in the financial crisis of their farm borrowers.

Analysis of agricultural interest rates over time can provide insights into the farm financial crisis of the mid-1980's. This article provides a discussion of recent interest rate movements, and offers an interpretation of the extent to which various lenders' agricultural interest rates parallel not only each other's rates, but also the prevailing nonagricultural rates.

The farm sector underwent a massive financial restructuring during the 1980's. The rising incomes and appreciating asset values of the 1970's both facilitated, and were facilitated by, rapidly increasing debt financing. Interest expenses as a percentage of all farm production expenses rose from 7.5 percent in 1970 to 10.6 percent in 1979, reflecting both rising nominal interest rates and the growing importance of credit as an input in the agricultural production process. As the farm financial crisis of the 1980's developed, it became apparent that the income produced by the sector could not support debt levels that had been incurred to finance the previous expansion.

Farm debt increased by over \$25 billion from 1980 through the end of 1983, despite a \$50-billion decline in farm business assets during the same period. The higher debt levels, combined with rising real interest rates on that debt, fueled

the evolution of a cost price squeeze of the early 1980's into a mid-decade farm financial crisis. The proportion of farm production expenses allocated to interest payments rose from 12.2 percent in 1980 to 15.7 percent in 1982.

Interest expenditures fell by almost one-third between 1983 and 1989, a result of the combined impact of reduced debt levels and declining nominal interest rates. The relative importance of interest expense also fell steadily during the late 1980's; by 1989, these expenses accounted for only 11 percent of all production expenses.

Interest Rate Movements During the 1980's

The difference between prime rates (table B-1) and those charged by agricultural lenders provides a simplistic measure of the cost of funds to the farm sector relative to other economic sectors, and reflects lenders' confidence in the health of the agricultural economy. In response to the economic pressures of the 1980's and the concurrent deregulation of financial markets, interest rates on agricultural loans should be increasingly correlated with rates in money and capital markets.

The interest rate premium large banks charge agricultural borrowers on nonreal estate loans (table B-2) has averaged about 1 percent over prime since 1980, except for the period 1982-86, when the differential increased to 1.3 percent. This premium seems small relative to the risk associated with lending to the sector during this period. However, over 60 percent of farm nonreal estate loans are made by small banks, which were forced to exact a higher premium from their farm borrowers. Interest rates charged by small banks on agricultural loans during the critical 1985-87 period carried a 3.44-percent premium over the prime rate set by large banks.

¹ Agricultural economists, Farm Sector Financial Analysis Branch and Finance and Development Policy Branch, respectively, Agriculture and Rural Economy Division, Economic Research Service.

Table B-1--Selected agricultural interest rates on real estate loans, 1960-89 1/

Interest Rates on Various Types of Loans							
Year	Prime rate charged by banks 2/	3-month Treasury bills 2/	Real estate				
			Federal Land Banks 3/	Life insurance companies 4/	FmHA 5/		Av. on farm real estate loans 6/
					Regular	Limited resource	
Percent							
1960	4.82	2.95	6.00	5.00	5.00	NA	5.00
1965	4.54	3.95	5.60	5.50	5.00	NA	5.35
1970	7.91	6.44	8.68	9.31	5.00	NA	5.88
1975	7.86	5.82	8.69	10.03	5.00	NA	6.98
1980	15.27	11.61	10.39	13.21	11.05	4.82	8.17
1981	18.87	14.03	11.27	15.42	12.99	5.50	8.92
1982	14.86	10.69	12.27	15.51	12.96	6.50	9.58
I	16.27	12.90	12.17	16.36	13.25	6.75	NA
II	16.50	12.36	12.28	16.21	13.25	6.63	NA
III	14.72	9.71	12.35	15.99	13.25	6.63	NA
IV	11.96	7.94	12.29	13.46	12.08	6.00	NA
1983	10.79	8.63	11.63	12.47	10.79	5.27	9.60
I	10.88	8.08	11.90	12.93	10.89	5.34	NA
II	10.50	8.42	11.70	12.30	10.75	5.25	NA
III	10.80	9.19	11.49	12.08	10.75	5.25	NA
IV	11.00	8.79	11.44	12.55	10.75	5.25	NA
1984	12.04	9.58	11.76	13.49	10.75	5.25	9.48
I	11.07	9.13	11.50	13.04	10.75	5.25	NA
II	12.31	9.84	11.62	13.56	10.75	5.25	NA
III	12.99	10.34	11.79	13.71	10.75	5.25	NA
IV	11.80	8.97	12.14	13.65	10.75	5.25	NA
1985	9.93	7.48	12.24	12.60	10.75	5.25	9.06
I	10.54	8.18	12.24	12.88	10.75	5.25	NA
II	10.20	7.52	12.40	12.73	10.75	5.25	NA
III	9.50	7.10	12.40	12.50	10.75	5.25	NA
IV	9.50	7.15	12.40	12.34	10.75	5.25	NA
1986	8.33	5.98	11.61	10.57	9.13	5.06	9.05
I	9.37	6.89	11.90	11.53	10.75	5.25	NA
II	8.61	6.13	11.50	10.37	9.25	5.00	NA
III	7.85	5.53	11.10	10.26	8.25	5.00	NA
IV	7.50	5.34	11.95	10.13	8.25	5.00	NA
1987	8.22	5.82	11.10	10.21	8.90	5.00	8.96
I	7.50	5.53	11.40	9.48	8.25	5.00	NA
II	8.05	5.73	10.90	9.97	8.25	5.00	NA
III	8.40	6.03	10.75	10.50	9.25	5.00	NA
IV	8.92	6.11	11.50	10.88	9.83	5.00	NA
1988	9.32	6.69	10.10	10.36	9.46	5.00	9.46
I	8.60	5.76	9.88	10.47	9.50	5.00	NA
II	8.75	6.23	9.82	10.07	9.17	5.00	NA
III	9.67	6.99	10.06	10.46	9.50	5.00	NA
IV	10.17	7.69	10.56	10.49	9.67	5.00	NA
1989	10.88	8.12	NA	NA	9.33	5.00	9.36
I	11.00	8.53	NA	NA	9.67	5.00	NA
II	11.42	8.44	NA	NA	9.75	5.00	NA
III	10.58	7.85	NA	NA	9.17	5.00	NA
IV	10.50	7.64	NA	NA	8.75	5.00	NA

NA= Not available. 1/ For historical data see Agricultural Finance Statistics, USDA, ERS, 1960-83. 2/ Source: Council of Economic Advisors, Economic Indicators. 3/ Source: Farm Credit Administration. 4/ Estimated by ERS from data obtained in a quarterly life insurance survey. 5/ Average for new FmHA loans, rates are weighted by length of time various rates were in effect during the quarter. 6/ Computed from data in Economic Indicators of the Farm Sector, USDA, ERS. Average interest rate on outstanding debt, excluding farm operator household interest and debt.

B-2--Selected agricultural interest rates on nonreal estate loans, 1960-89 1/

Year	Nonreal estate							
	Commercial banks 2/			Production Credit Assns. 3/	FmHA 4/		Ave. on farm nonreal estate loans 5/	Average on total farm debt 5/
	All banks	Large banks	Other banks		Regular	Limited resource		
Percent								
1960	6.80	NA	NA	7.25	5.00	NA	6.12	5.58
1965	6.70	NA	NA	6.58	5.00	NA	5.97	5.65
1970	8.32	NA	NA	9.45	6.88	NA	7.45	6.58
1975	9.03	NA	NA	9.11	8.63	NA	7.83	7.39
1980	15.20	16.20	15.00	12.74	10.97	6.82	11.11	9.58
1981	18.50	19.80	18.10	14.46	14.03	8.13	12.66	10.69
1982	16.70	16.10	17.00	14.58	13.73	10.75	12.61	11.01
I	17.70	18.00	17.50	15.26	14.33	11.33	NA	NA
II	17.80	17.90	17.70	14.84	14.25	11.25	NA	NA
III	16.70	15.60	16.40	14.42	14.25	11.25	NA	NA
IV	14.70	13.30	15.40	13.80	12.08	9.17	NA	NA
1983	13.50	12.10	14.10	11.95	10.31	7.31	11.51	10.50
I	13.80	12.50	14.10	12.83	10.49	7.49	NA	NA
II	13.20	12.00	13.90	11.77	10.25	7.25	NA	NA
III	13.60	12.20	14.10	11.37	10.25	7.25	NA	NA
IV	13.60	11.80	14.20	11.82	10.25	7.25	NA	NA
1984	14.10	13.10	14.40	12.47	10.25	7.25	11.25	10.31
I	13.50	12.20	14.10	12.05	10.25	7.25	NA	NA
II	14.20	13.30	14.50	12.10	10.25	7.25	NA	NA
III	14.80	14.40	14.90	12.61	10.25	7.25	NA	NA
IV	14.20	13.40	14.40	13.10	10.25	7.25	NA	NA
1985	12.80	11.20	13.40	12.40	10.25	7.25	10.13	9.55
I	13.21	11.70	13.80	12.91	10.25	7.25	NA	NA
II	13.00	11.50	13.60	12.50	10.25	7.25	NA	NA
III	12.30	10.60	12.90	12.16	10.25	7.25	NA	NA
IV	12.30	10.60	13.10	12.03	10.25	7.25	NA	NA
1986	11.50	9.60	12.10	11.22	8.66	5.66	10.18	9.56
I	12.00	10.30	12.80	11.40	10.25	7.25	NA	NA
II	11.50	9.70	12.00	11.25	8.71	5.71	NA	NA
III	11.40	9.30	12.10	11.25	8.00	5.00	NA	NA
IV	10.80	8.90	11.50	11.00	7.67	4.67	NA	NA
1987	10.60	9.20	11.30	10.20	8.27	5.27	10.67	9.73
I	10.10	8.40	11.20	10.10	7.50	4.50	NA	NA
II	10.70	9.40	11.20	10.00	7.50	4.50	NA	NA
III	10.40	9.30	11.10	10.00	8.75	5.75	NA	NA
IV	11.00	9.60	11.60	10.30	9.33	6.33	NA	NA
1988	11.20	10.20	11.60	10.56	9.02	6.02	11.08	10.50
I	11.00	9.70	11.60	10.48	9.00	6.00	NA	NA
II	10.70	9.70	11.30	10.51	8.67	5.67	NA	NA
III	11.50	10.70	11.80	10.43	9.00	6.00	NA	NA
IV	11.60	11.10	11.80	10.82	9.42	6.42	NA	NA
1989	12.50	12.10	12.70	NA	9.10	6.10	10.95	10.06
I	12.33	12.10	12.40	NA	9.40	6.40	NA	NA
II	12.90	12.80	13.00	NA	9.50	6.50	NA	NA
III	12.50	12.00	12.80	NA	9.00	6.00	NA	NA
IV	12.10	11.60	12.50	NA	8.50	5.50	NA	NA

NA= Not available. 1/ For historical data see Agricultural Finance Statistics, USDA, ERS, 1960-83. 2/ Source: Board of Governors of the Federal Reserve System, Nicholas Walraven. 3/ Source: Farm Credit Administration. 4/ Average for new FmHA operating loans, rates are weighted by length of time various rates were in effect during the quarter. 5/ Computed from data in Economic Indicators of the Farm Sector, USDA, ERS. Average interest rate on outstanding debt, excluding farm operator household interest and debt.

While the interest rate data support the contention that large banks generally charge lower rates than small banks, they also suggest that interest rates on small bank agricultural loans may be less volatile than those of large banks, which tend to more directly mirror the quarterly average prime rate. Small bank rates were as much as 1.7 percent below large banks during the peak interest rate period of 1981. By the fourth quarter of 1983, the small bank rates were 2.4 percent above large bank rates. Small bank interest rates averaged 2.3 percent higher than large bank rates during 1985-87, a period of substantial farm loan default and agricultural bank failure. It can be argued that the relative improvement in the financial health of agricultural lenders, due mainly to the improving agricultural economy, is reflected in the narrowing of this interest rate differential to 1.4 percent in 1988 and further to 0.6 percent in 1989.

The well documented financial problems of the Farm Credit System (FCS) can be traced, at least partially, to the FCS's desire to provide low cost loans to its member-borrowers during the early 1980's. FCS rates have displayed much less volatility than rates charged by other private agricultural lenders, which tend to follow more closely the prevailing current market rates. The FCS obtains loan funds through the issuance of bonds on national bond markets. By 1981, with 3-month Treasury bill interest rates over 14 percent and the prime rate almost 19 percent, the FCS was selling bonds at interest rates in excess of 15 percent, and charging an 11.27 percent average interest rate on new FLB loans. Despite the financial difficulties of the FCS, borrowers were offered interest rates that varied little over the decade. Federal Land Bank rates exceeded 12 percent for extended periods only in 1982 and 1985, and were above 10 percent except for a brief period of 1988. Production Credit Association rates were more variable, but generally remained within the 10- to 14.5-percent range.

Life insurance company (LIC) interest rates, while more variable than Federal Land Bank rates, have lagged the prime rate both rising and falling, reflecting the long-term investment nature of farm mortgage lending. Compared with Federal Land Bank 30-year loans, LIC mortgages are typically of shorter duration, with loan terms of 10-20 years, while loan placements are for larger amounts, often in the \$5-10 million range.

LICs' share of farm real estate debt declined from 14.5 percent in 1978 to 11.6 percent by the end of 1988, reflecting the trend within the life insurance industry away from mortgage lending in general, and farm mortgage lending in particular. Data reported by the American Council of Life Insurance indicate that from 1978 through the end of 1988, total LIC assets increased by 300 percent, while total mortgage share of those assets declined from 27.2 percent to 20.0 percent. During this period, the farm mortgage share of total LIC mortgages fell from 10.2 percent to 4.2 percent. As

LICs are shifting their mortgage lending toward multi-family and commercial loans, they are also redirecting their total asset portfolios toward government securities.

Interest rates on Farmers Home Administration limited-resource loans were first set on August 11, 1978, at 3 percent on farm ownership loans and 5 percent on operating loans. Even though these rates have varied over time, they have always compared favorably with FmHA regular rates and with those offered by the non-government agency lenders. Since their inception, interest rates on limited-resource farm ownership loans have exceeded 6.625 percent for only the 4-month period of October 1981 through January 1982. Since April 1, 1986, limited-resource farm ownership interest rates have been set at 5 percent. While operating loan rates have been allowed to vary, since October 1, 1981, they have been set at 3 percent below the current rate on regular FmHA operating loans.

These FmHA rates are not really comparable to rates for other lenders, since FmHA rates respond only indirectly to financial market forces. Also, FmHA loans are not typically available to the majority of farm borrowers, since virtually all financially desirable loan applicants would not qualify for FmHA's subsidized credit programs. To be eligible for FmHA loans, the borrower must meet FmHA's 'lender of last resort' criteria by showing evidence of rejection by both the Farm Credit System and a local commercial bank. In a period of declining land values, FmHA loans could realistically be viewed as transfer payments to a low income segment of the rural population. Obviously, FmHA loans are made with the idea of providing the low income farmer an economic opportunity that otherwise would not exist. Generally, loans are extended with the hope that the applicant's financial position will improve to the point that the borrower will be able to 'graduate' to a private lender, no longer needing subsidized credit to maintain a viable operation. The economic events of the 1980's rendered this FmHA 'graduation' scenario effectively inoperative.

Since FmHA held 14.9 percent of all farm debt at the end of 1989, these rates are presented here to provide a more complete listing of interest rates charged farm borrowers. Comparison of the spread between the 3-month Treasury bill rate, other agricultural loan rates, and the FmHA rates does, nevertheless, provide an indication of the level of interest rate subsidy inherent in these FmHA loan programs.

Interest Rate Comparisons and the Farm Financial Recovery

In response to the economic pressures and deregulation of financial markets, interest rates on agricultural loans should be increasingly correlated with those in money and capital markets. This appears to be true for most lenders, with the notable exception of the Farmers Home Administration, which, as mentioned previously, has a government mandated

economic opportunity agenda not necessarily consistent with profit maximization. Commercial bank agricultural interest rates, especially rates charged by large banks, tracked the prevailing market rate trends most consistently through the entire decade of the 1980's.

The Farm Credit System's direct access to national bond markets may have allowed the FCS to temporarily isolate itself from changes in prevailing market rates. Following a policy of pricing loans based on the average cost of bonds outstanding, rather than based on the cost of new issues, the FCS was able to operate profitably while providing borrowers with lower interest rates than those offered by its competitors. The FCS was able to use generally rising interest rate markets of the 1970's and early 1980's to gain a temporary price advantage over commercial banks, an advantage that the Production Credit Associations, relative to large commercial banks, were able to maintain through the fourth quarter of 1984.

Large commercial banks did not respond to below-market FCS rates by subsidizing loans to farmers. Larger banks were more restricted in their source of funds and by the prevailing regulatory environment. Besides, from a portfolio management perspective, it was more profitable for these banks to buy Farm Credit System bonds than to offer below-market rates in a competitive bid to expand agricultural loan volume and/or to retain farm borrowers. Smaller banks, particularly those reliant on the farm economy for the bulk of their business, appear to have been more willing to be price competitive to retain farm borrowers. However, commercial banks generally set loan rates based on their current cost of funds. Consequently, bank interest rates were more volatile during the 1980's than their FCS counterparts.

Between 1983 and 1985, the average rate for agricultural loans followed the general decline in prevailing market rates. During the 1986-88 period, the average spread between the different agricultural interest rates decreased substantially, as these rates began more closely tracking each other in 1985.

Throughout the decade, Farm Credit System rates exhibited much less volatility than other lender rates. The stability of these rates proved to be expensive for the FCS, due to the rising cost of the bonds sold to finance the below market rate loans to farmers. Historically, FCS bonds typically sold at a premium of 0.25 to 0.5 percent above Treasury securities with similar maturation dates. As large potential FCS losses appeared inevitable, investor confidence in the FCS bonds deteriorated. During 1986, FCS bonds carried a premium of as much as 1.3 percent to equivalent Treasury securities. However, during 1987, investor expectations were buoyed both by an improving agricultural economy and by FCS assistance provisions anticipated to be included in the emerging Agricultural Credit Act. By late 1987, investors were regaining confidence in FCS securities and the risk premium

began to decline. In addition, the FCS was making progress in retiring a significant portion of higher cost bond issues, through the issuance of shorter term maturities that could more easily be repriced as credit conditions changed in the general and farm economies. FCS bonds were selling well at the end of 1989, with the November issue trading at a 0.22-percent premium over equivalent Treasury securities, an improvement from the 0.56-percent premium of only a month earlier. The success of this issue reduced the average cost of the outstanding FCS bond portfolio to 9.78 percent, a 0.05-percent drop in one month.

It appears that the close tracking relationship among agricultural interest rates was changing again by the end of 1988, as the FCS interest rates began to decline relative to other agricultural rates, especially bank rates. Unfortunately, the FCS did not report interest rates in 1989, making it difficult to assess their current rates relative to other lenders.

The FCS held approximately one-third of all farm debt at the end of 1984, while commercial banks share was about 25 percent. By the end of 1988, these market shares had been virtually reversed, with banks being the farm sector's largest creditor. FCS interest rates and lending activity warrant close observation over the near future, as the FCS appears to be financially well positioned to attempt to regain this lost market share. The Agricultural Credit Act of 1987 authorized \$4 billion, if necessary, to assist the FCS. To date, less than \$1 billion of this has been expended. Favorable current bond rates, and the expected continuing downward trend in interest rates generally, coupled with the security afforded by \$3 billion of available assistance, could allow the FCS to fund new loans at interest rates that are not only below those offered by competitors, but also below the both current and average rates on FCS bonds.

Conclusions

The combined impacts of general economic forces and deregulation of financial markets during the 1980's created pressures for agricultural interest rates to align more closely with rates in money and capital markets. Through the late 1980's this rate convergence phenomenon seemed to be emerging. However, by late 1988, it appeared that the FCS's ability to sell its securities directly in national bond markets and to construct a diversified portfolio with respect to the maturities of those bonds allows the FCS to buffer the effects of market forces which have affected commercial bank interest rates. Probably as a result of an implied government guarantee, FCS rates do not reflect a true risk premium and thus move independently of other financial market forces and are more directly related to the financial position of the FCS as a whole.

Interest Rate Data Series

Interest rate data series presented here include: 1) prime rate charged by banks and the 3-month Treasury bill rate, considered to be economy wide interest rate measures; 2) interest rates charged by selected agricultural lenders on new real estate loans and new nonreal estate loans; and 3) average interest rates on all real estate debt, all nonreal estate debt, and total debt outstanding (tables B-1 and B-2). These data are presented annually for selected years between 1960 and 1981, and both quarterly and annually for the period 1982-1989.

Prime Rate and Treasury Bill Rate

The prime rate is the rate banks charge their best commercial customers, while the 3-month Treasury bill rate measures the short term cost of money to the Federal Government. The data, provided by the Department of the Treasury and the Board of Governors of the Federal Reserve System, are annually drawn from the December issue of Economic Indicators, a publication of the Council of Economic Advisors prepared for the Joint Economic Committee of Congress. Rates are reported by the Council of Economic Advisors for the current year only on a monthly basis. Current year prime rate monthly data are reported as a range, representing the opening and closing rates for the month. Monthly prime rates are simple averages of these opening and closing rates. Current year quarterly and annual rates presented here are simple averages of the monthly rates. These data are revised annually to reflect updates of historical data prepared by the Council.

Farm Credit System

Historical interest rates charged by the Farm Credit System (FCS) on new real estate loans (through the Federal Land Banks, table B-1) and new nonreal estate loans (through Production Credit Associations, table B-2) were prepared by the Farm Credit Administration. Prior to 1988, rates were reported separately for Federal Land Banks (FLB) and Production Credit Associa-

tions (PCA). FLB and PCA average rates on new loans were based on contract rates on farm loans issued by each lender within each Farm Credit district. In computing average rates, each of the twelve Farm Credit districts was given equal weight.

Recent FCS merger activity has created Agricultural Credit Associations (ACA) which extend both real estate and nonreal estate loans. Interest rate data for 1988 are based on Farm Credit System-wide weighted average interest rates on real estate loans (whether issued by FLB or ACA) and nonreal estate loans (whether issued by PCA or ACA). Interest rates for 1989 are not included, since the Farm Credit Banks are no longer required to report interest rates on new loans to the Farm Credit Administration. Alternative methodologies to obtain future interest rate data directly from Farm Credit Banks are being explored.

Life Insurance Companies

Interest rates on new life insurance company (LIC) loans are obtained in annual Economic Research Service surveys of the nine largest LIC lenders to agriculture. Prior to 1986, data were collected in quarterly surveys. To reduce the paperwork required of respondents, in 1986, the survey was modified to an annual survey, conducted in March, designed to obtain quarterly data for the previous year. Rates presented here are the average quarterly interest rates reported by LIC survey respondents, weighted by reported average annual loans outstanding. While the interest rate data for 1989 have not yet been reported, next year's survey is being rescheduled for late January. If possible, 1990 LIC interest rates will be included in the February 1991 issue (AFO-40).

Farmers Home Administration

Traditionally, tables presented in this issue of the AFO have included average interest rates on new loans issued under two regular Farmers Home Administration (FmHA) loan programs. While FmHA interest

rates vary considerably between loan program types, the AFO has included only regular farm ownership rates (reported as real estate rates, table B-1) and regular operating loan rates (reported as nonreal estate rates, table B-2). The Emergency Agricultural Credit Adjustment Act, enacted August 4, 1978, authorized that special reduced interest rate ownership and operating loans be made available to limited-resource farmers. Favorable interest rates led to growing popularity of these FmHA programs, and, by the end of 1989, limited-resource loans accounted for over 75 percent of all new farm ownership loans, and over two-thirds of all new operating loans. Since a decreasing proportion of FmHA loans are being made at regular interest rates, FmHA interest rates are presented, for the first time in this issue, in a dual column format showing both regular and limited-resource interest rates on farm ownership (table B-1) and operating (table B-2) loans.

Interest rate data were obtained from FmHA Instruction 1951-L, Exhibit C, an FmHA Special PN, December 1, 1988, which includes dates that various FmHA program rates have taken effect since the end of 1976.

Quarterly average rates on new loans were calculated as a weighted average interest rate, based on the number of days that each rate was in effect during that quarter. Rates for 1989 are computed based on the date of rate changes reported by the FmHA Budget Staff.

FmHA interest rates described here are rates on insured loans, which are made from the Agricultural Credit Insurance Fund. Monies in the fund arise from repayment of existing loans, Congressional appropriations, and the sale of Certificates of Beneficial Ownership to the Federal Financing Bank.

Commercial Banks

Interest rate data for bank nonreal estate loans are based on quarterly surveys conducted by the Federal Reserve Board. Surveyed banks provide information on all agricultural loans originated during the first full

week of the second month of each quarter. For example, third quarter interest rates are based on loans made during the first week of August. For each agricultural loan made during the designated week, surveyed banks report loan amount, interest rate, and loan purpose.

Commercial bank interest rate data are presented for all banks, large banks, and other banks (table B-2). Beginning with the third quarter of 1989, the data reflect slight modification in sampling design. Previously, a sample of 250 banks had been drawn from a list of commercial banks stratified by total business loans. Of these, only about 130 would typically report any agricultural lending during the survey week. Large banks in States with statewide branch banking tend to be overrepresented in this sampling procedure, relative to the small local banks, which supply much of the agricultural credit throughout the midwest. As of the third quarter of 1989, this sampling procedure was modified to survey banks stratified by agricultural loans, rather than total business loans. This change, while maintaining the statistical reliability of the data, has effectively doubled the sample size, since the entire sample of 250 banks can be expected to report agricultural loans.

Commercial banks are classified by size for interest rate purposes under the assumption that larger banks have access to a larger supply of funds, which they can obtain at lower interest rates. The extent to which these banks are then able to pass these lower rates on to their borrowers should be reflected in lower average interest rates charged by large banks. To date, the classification of banks by size has been based on total bank assets. Banks that are relatively large agricultural lenders may be classified as small banks by this criteria. Conversely, large banks may have small agricultural loan portfolios. In future reporting of these interest rate data, the Federal Reserve Board may use agricultural loan volume as an alternative measure for distinguishing between large and small banks.

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Appendix table 1--Total farm debt, excluding households, December 31

Year	Debt owed to reporting institutions					Individuals and others	Total debt
	Farm Credit System	Commercial banks	Farmers Home Adm.	Life insurance companies	Total		
Million dollars							
1976	29,008	28,077	4,963	6,828	68,876	27,191	96,065
1977	32,994	31,289	6,377	8,150	78,810	32,047	110,857
1978	37,566	34,435	8,832	9,698	90,531	36,871	127,402
1979	45,376	37,125	14,442	11,278	108,221	43,329	151,551
1980	52,958	37,746	17,460	11,991	120,155	46,624	166,779
1981	61,523	38,788	20,792	12,136	133,239	49,037	182,275
1982	64,524	41,948	21,338	11,898	139,708	49,793	189,501
1983	64,418	45,569	21,573	11,834	143,394	49,301	192,694
1984	63,308	46,932	22,946	11,592	144,778	45,899	190,775
1985	55,107	44,181	24,254	11,035	134,577	40,537	175,215
1986	45,179	41,355	23,907	10,199	120,640	34,484	155,124
1987	39,528	40,896	23,372	9,231	113,027	30,048	143,075
1988	36,790	42,502	21,711	8,938	109,941	28,452	138,393
1989p	35,179	43,858	20,213	8,852	108,102	27,516	135,618
Percent change in year							
1976	15.0	13.8	7.8	10.2	13.5	11.8	13.0
1977	13.7	11.4	28.5	19.4	14.4	17.9	15.4
1978	13.9	10.1	38.5	19.0	14.9	15.1	14.9
1979	20.8	7.8	63.5	16.3	19.5	17.5	19.0
1980	16.7	1.7	20.9	6.3	11.0	7.6	10.0
1981	16.2	2.8	19.1	1.2	10.9	5.2	9.3
1982	4.9	8.1	2.6	-2.0	4.9	1.5	4.0
1983	-0.2	8.6	1.1	-0.5	2.6	-1.0	1.7
1984	-1.7	3.0	6.4	-2.0	1.0	-6.9	-1.0
1985	-13.0	-5.9	5.7	-4.8	-7.0	-11.7	-8.2
1986	-18.0	-6.4	-1.4	-7.6	-10.4	-14.9	-11.5
1987	-12.5	-1.1	-2.2	-9.5	-6.3	-12.9	-7.8
1988	-6.9	3.9	-7.1	-3.2	-2.7	-5.3	-3.3
1989p	-4.4	3.2	-6.9	-1.0	-1.7	-3.3	-2.0
Percentage distribution of debt							
1976	30.2	29.2	5.2	7.1	71.7	28.3	100.0
1977	29.8	28.2	5.8	7.4	71.1	28.9	100.0
1978	29.5	27.0	6.9	7.6	71.1	28.9	100.0
1979	29.9	24.5	9.5	7.4	71.4	28.6	100.0
1980	31.8	22.6	10.5	7.2	72.0	28.0	100.0
1981	33.8	21.3	11.4	6.7	73.1	26.9	100.0
1982	34.0	22.1	11.3	6.3	73.7	26.3	100.0
1983	33.4	23.6	11.2	6.1	74.4	25.6	100.0
1984	33.2	24.6	12.0	6.1	75.9	24.1	100.0
1985	31.5	25.2	13.8	6.3	76.8	23.1	100.0
1986	29.1	26.7	15.4	6.6	77.8	22.2	100.0
1987	27.6	28.6	16.3	6.5	79.0	21.0	100.0
1988	26.6	30.7	15.7	6.5	79.4	20.6	100.0
1989p	25.9	32.3	14.9	6.5	79.7	20.3	100.0

P=Preliminary. 1/ Includes individuals and others (land for contract, merchants and dealers credit, etc.) and CCC storage and drying facilities loans.

Appendix table 2--Real estate farm debt, excluding households, December 31

Year	Debt owed to reporting institutions					Individuals and others	CCC storage and drying facilities	Total
	Farm Credit System	Life insurance companies	Commercial banks	Farmers Home Administration	Total			
Million dollars								
1976	16,881	6,828	6,075	3,311	33,095	17,258	144	50,497
1977	19,640	8,150	6,994	3,613	38,397	19,556	492	58,445
1978	22,686	9,698	7,717	3,746	43,847	21,712	1,148	66,707
1979	27,322	11,278	7,798	6,254	52,652	25,660	1,391	79,704
1980	33,208	11,991	7,760	7,431	60,390	27,801	1,456	89,647
1981	40,254	12,136	7,573	8,086	68,049	29,291	1,342	98,682
1982	43,966	11,898	7,626	8,361	71,851	29,527	1,127	102,505
1983	45,026	11,834	8,494	8,718	74,072	29,847	888	104,806
1984	45,216	11,592	9,313	9,206	75,327	27,636	623	103,691
1985	41,105	11,035	10,443	9,540	72,123	25,160	307	97,690
1986	34,862	10,199	11,677	9,482	66,220	22,218	123	88,472
1987	30,144	9,231	13,307	9,249	61,931	19,086	46	80,786
1988	28,024	8,938	14,193	8,812	59,967	16,677	15	76,696
1989p	26,059	8,852	15,263	8,421	58,595	15,751	5	74,351
Percent change in year								
1976	16.2	10.2	8.1	8.8	12.6	9.5	-15.3	11.4
1977	16.3	19.4	15.1	9.1	16.0	13.3	241.7	15.7
1978	15.5	19.0	10.3	3.7	14.2	11.0	133.3	14.1
1979	20.4	16.3	1.0	67.0	20.1	18.2	21.2	19.5
1980	21.5	6.3	-0.5	18.8	14.7	8.3	4.7	12.5
1981	21.2	1.2	-2.4	8.8	12.7	5.4	-7.8	10.1
1982	9.2	-2.0	0.7	3.4	5.6	0.8	-16.0	3.9
1983	2.4	-0.5	11.4	4.3	3.1	1.1	-21.2	2.2
1984	0.4	-2.0	9.6	5.6	1.7	-7.4	-29.8	-1.1
1985	-9.1	-4.8	12.1	3.6	-4.3	-9.0	-50.7	-5.8
1986	-15.2	-7.6	11.8	-0.6	-8.2	-11.7	-59.9	-9.4
1987	-13.5	-9.5	14.0	-2.5	-6.5	-14.1	-62.6	-8.7
1988	-7.0	-3.2	6.7	-4.7	-3.2	-12.6	-67.4	-5.1
1989p	-7.0	-1.0	7.5	-4.4	-2.3	-5.6	-66.7	-3.1
Percentage distribution of debt								
1976	33.4	13.5	12.0	6.6	65.5	34.2	0.3	100.0
1977	33.6	13.9	12.0	6.2	65.7	33.5	0.8	100.0
1978	34.0	14.5	11.6	5.6	65.7	32.5	1.7	100.0
1979	34.3	14.1	9.8	7.8	66.1	32.2	1.7	100.0
1980	37.0	13.4	8.7	8.3	67.4	31.0	1.6	100.0
1981	40.8	12.3	7.7	8.2	69.0	29.7	1.4	100.0
1982	42.9	11.6	7.4	8.2	70.1	28.8	1.1	100.0
1983	43.0	11.3	8.1	8.3	70.7	28.5	0.8	100.0
1984	43.6	11.2	9.0	8.9	72.6	26.7	0.6	100.0
1985	42.1	11.3	10.7	9.8	73.8	25.8	0.3	100.0
1986	39.4	11.5	13.2	10.7	74.8	25.1	0.1	100.0
1987	37.3	11.4	16.5	11.4	76.7	23.6	0.1	100.0
1988	36.5	11.7	18.5	11.5	78.2	22.7	0.0	100.0
1989p	35.0	11.9	20.5	11.3	78.8	21.2	0.0	100.0

P = Preliminary.

Appendix table 3--Nonreal estate farm debt, excluding households, December 31

Year	Debt owed to reporting institutions				Individuals and others	Total	CCC crop loans
	Farm Credit System	Commercial banks	Farmers Home Administration	Total			
Million dollars							
1976	12,127	22,002	1,652	35,781	9,789	45,570	936
1977	13,354	24,295	2,764	40,413	11,999	52,412	4,146
1978	14,880	26,718	5,086	46,684	14,011	60,695	4,646
1979	18,054	29,327	8,188	55,569	16,278	71,848	3,714
1980	19,750	29,986	10,029	59,765	17,367	77,132	3,836
1981	21,269	31,215	12,706	65,190	18,404	83,593	6,888
1982	20,558	34,322	12,977	67,857	19,139	86,996	15,204
1983	19,392	37,075	12,855	69,322	18,566	87,888	10,576
1984	18,092	37,619	13,740	69,451	17,640	87,084	8,428
1985	14,002	33,738	14,714	62,454	15,070	77,525	17,598
1986	10,317	29,678	14,425	54,420	12,143	66,563	19,190
1987	9,384	27,589	14,123	51,096	10,916	61,900	15,120
1988	8,766	28,309	12,899	49,974	11,760	62,731	8,902
1989p	9,120	28,595	11,792	49,507	11,760	61,267	7,000
Percent change in year							
1976	13.5	15.5	5.9	14.3	16.8	14.8	303.4
1977	10.1	10.4	67.3	12.9	22.6	15.0	342.9
1978	11.4	10.0	84.0	15.5	16.8	15.8	12.1
1979	21.3	9.8	61.0	19.0	16.2	18.4	-20.1
1980	9.4	2.2	22.5	7.6	6.7	7.4	3.3
1981	7.7	4.1	26.7	9.1	6.0	8.4	79.6
1982	-3.3	10.0	2.1	4.1	4.0	4.1	120.7
1983	-5.6	8.0	-0.9	2.2	-3.0	1.0	-30.4
1984	-6.7	1.5	6.9	0.2	-5.0	-0.9	-20.3
1985	-22.6	-10.3	7.1	-10.1	-14.6	-11.0	108.8
1986	-26.3	-12.0	-2.0	-12.9	-19.4	-13.8	9.0
1987	-9.0	-7.0	-2.1	-6.1	-10.1	-7.4	-21.2
1988	-6.6	2.6	-8.7	-2.2	7.7	1.3	-41.1
1989p	4.0	1.0	-8.6	-0.9	0.0	-2.3	-21.4
Percentage distribution of debt							
1976	26.6	48.3	3.6	78.5	21.5	100.0	
1977	25.5	46.4	5.3	77.1	22.9	100.0	
1978	24.5	44.0	8.4	76.9	23.1	100.0	
1979	25.1	40.8	11.4	77.3	22.7	100.0	
1980	25.6	38.9	13.0	77.5	22.5	100.0	
1981	25.4	37.3	15.2	78.0	22.0	100.0	
1982	23.6	39.5	14.9	78.0	22.0	100.0	
1983	22.1	42.2	14.6	78.9	21.1	100.0	
1984	20.8	43.2	15.8	79.8	20.3	100.0	
1985	18.1	43.5	19.0	80.6	19.4	100.0	
1986	15.4	44.4	21.6	81.4	18.2	100.0	
1987	15.2	44.6	22.8	82.5	17.6	100.0	
1988	14.0	45.1	20.6	79.7	18.7	100.0	
1989p	14.9	46.7	19.2	80.8	19.2	100.0	

P = Preliminary

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